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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE

1873.

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,

AND OF

THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY

WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On the Changes of the Temperature of the Body during the course of Tuberculosis.*

By Professor LEBERT.

(*Deutsches Archiv für klinische Medicin*, Band xi., Heft 1, 1872.)

1. At the commencement of tuberculosis the temperature can be taken in the rectum as conveniently as in the axilla. In late phases of the disease, however, patients can no longer tolerate rectal investigations, especially when these are frequently repeated during the day.

2. In order for an accurate chart of the course of the temperature to be made, observations should be taken, not merely three times daily, but every two or three hours. Hourly observations disturb the patients much, and afford no especially important results.

3. The course of the temperature in tuberculosis is generally that met with in protracted inflammatory diseases, with varying degrees of fever. Specific peculiarities are wanting.

4. The individual pyrogenic disposition of each patient exercises a considerable influence on the course of the temperature, which influence is often greater than that of the fever, of the localization, of the phase of development, and of the course of the disease.

5. The fever of tuberculosis, which, on an average, is not very high, appertains to the chief factors of exhaustion and consumption, therefore both through its prolonged duration and through the great irregularity in the bodily temperature often observed in the course of twenty-four hours.

6. Age and sex, at least after and probably before puberty, exercise no remarkable and by no means a constant influence on the changes of temperature and the height of the fever.

7. The seemingly typhoid course which is observed in the early stages of chronic, and especially in acute tuberculosis, presents a course which is totally different to that of actual typhus. The rapid rise to a con-

siderable height is wanting, the morning and evening temperatures are lower, the remissions are less marked and very irregular, and the inverse type is not unfrequently presented.

8. As the temperature does not often correspond either to external influences or to the phases and forms of the disease, it is probable that under seemingly like pathological conditions exchange-products may be developed, which vary in their pyrogenic intensity, and with which a more or less poisonous element may possibly be mixed.

9. The fever in tuberculosis affords us a physical basis for the disturbances in structural changes, although through defective chemical knowledge with regard to those changes, the problem is still unsolved.

10. The minimum morning temperature is a marked subnormal or normal one, whilst the maximum morning temperature may be highly febrile; the latter, however, occurs too seldom to have any decided general value.

11. The medium morning temperature, which has much greater importance than the minimum or maximum morning temperature, has in the earlier and later stages of the disease a tendency to be normal; in the middle stage, and at the height of the disease, it is elevated by one or one and a half degrees on an average, and in exceptional cases only mounts higher. Morning fever may be absent, is generally mild, seldom high.

12. The evening temperature is generally, even at its maximum, decidedly febrile, but seldom, however, very high. These very high elevations have very little general value, and occur only now and then. The medium evening temperature is of more decided value. It is generally high, and generally attains 39° or 39°·5 C.; it not unfrequently reaches 40° C., but rarely reaches and exceeds 41° C. In the later stages of bad tuberculosis the evening temperature falls, and seldom exceeds 38°·5 C.; there may, however, be occasional evening fever.

13. Fits of high fever occur more frequently in acute than in chronic tuberculosis; the medium fever form does not, however, differ much in these two affections. The alliance of the different forms and manifestations of tuberculosis is thus confirmed by the course of the temperature.

14. Tuberculosis is, generally speaking, a moderately febrile affection, and stands far below the highly febrile and acute disorders, such as pneumonia, typhus, and the acute exanthems. With regard to its temperature it resembles rather protracted exudative inflammations. The long duration and frequent fluctuations have more to do with the progressive debility of the patient than the intensity of the fever itself.

15. If with progressively destroying disease the fever diminishes this is the result of collapse. The height of the fever is the resultant of the pyrogenic product-changes, which increase the febrile condition, and of the influence of collapse, which reduce it. This influence preponderates in the morning, but sometimes, though much less frequently, affects the evening temperature at a late stage. Then one occasionally finds considerable recurrent-like declivities from the evening to the morning temperatures.

16. An abnormally high temperature cannot in the majority of cases be explained either anatomically or chemically, it may concur with

moderate extension and moderate destruction as well as with intense and rapidly destructive tuberculosis, with a rapidly progressing as well as with slow tuberculosis.

17. A curve presenting high fever in the morning and evening indicates slight remissions; an almost continuous fever superadded, excessive remissions.

18. A remarkable phenomenon presented in the last weeks and days of the disease is excessive cooling, which may even fall to below 33°, such cooling being preceded by recurrent-like falls of temperature, and followed by considerable increase. Cooling of this kind indicates a near termination, and in the course of it death may occur, although only in very exceptional cases.

19. The fever type with regard to the remissions, as well from the morning to the evening as from the evening to the morning, even from one observation to another when taken every two or three hours, is very fluctuating and irregular. These fluctuations belong to the characteristic phenomena of the temperature conditions in tuberculosis.

20. Very slight, moderate, or high remissions occur both in acute and chronic tuberculosis, with compact, firm deposit, and with large cavities; and it is an error to attribute subcontinuous and high fever specially to acute tuberculosis.

21. The morning temperature exercises a much more important influence than the evening temperature on the fever type and height of the remissions, although in these respects it may present various deviations.

22. As in late stages, the early morning temperature sinks more considerably than that of the evening, yet at this time steep remittent curves are obtained much earlier than on former occasions. This condition persists, although the evening temperature may have fallen, since the morning temperature is then often subnormal.

23. Very considerable fluctuations in the remissions may take place even independently of the influence of collapse; the type may at one time be ascending, at another inverse, and, again, it may be broken. Between every two successive observations there may be a difference of one degree or more, and then the ataxy preponderates in the whole curve.

24. Continuous fall of temperature from the morning to the evening, the typus inversus, is generally but an isolated occurrence, but, however, may so prevail that this inverted type is met with on two-thirds or even three-fourths of all the days of observation; indeed, of being merely restricted to the day, the fall may continue for twenty-four or even thirty-six hours. The remission fluctuations are not milder with this than with the ordinary type. The proper course of typus inversus is unknown to us.

25. When the course of tuberculosis has been suspended or when the condition of the patient has been much improved, or again, when prolonged fever has finally ceased or been much reduced, the morning temperature may for a long time be subnormal without any bad indication being presented.

26. When with the later and advanced development of tuberculosis the subnorm is already a result of collapse, we may observe superadded

phases of considerable drops and rises, which may give an intermittent-like appearance to a portion of the curve. In these instances the maximum of temperature may fall at some hour in the forenoon, there may even be a second evening maximum, so that this curve-portion may resemble somewhat that of a duplicate quotidian intermittent.

27. Towards the end of the disease, when the fatal result is near, one observes sometimes a progressive sinking of temperature, at other times a not inconsiderable ascent. Death occurs but very exceptionally with a temperature of 34° C. or 35° C. In about two-fifths of the cases the terminal temperature is normal or subnormal, on the other hand, in three-fifths, that is to say the greater proportion, it is in almost equal proportion moderately febrile or highly febrile. Death seldom occurs when the temperature is above 40° C., or, as has been stated, below 35° C. The maximum terminal temperature observed was 42° C.

28. The concurrence of death with elevated temperature occurs more frequently in acute than in chronic tuberculosis.

On the Temperature in the Different Forms and Complications of Tuberculosis.

29. With commencing, slowly progressing, chronic disseminated pneumonia the temperature in the early stage is normal, afterwards there is a slight elevation to 38° C., and somewhat beyond this; at first towards the evening, and afterwards more and more frequently. The morning temperature does not rise above the normal point even by a few tenths until at a much later period.

30. If the first phase of this disseminated tuberculosis be well marked and distinctly febrile, the temperature chart will present great variety. Even now fever may be absent in the morning and not manifestly present before the evening. The fever may, however, be well marked in the early stage of the disease, although moderate in the morning and evening, and then with increasing improvement in the symptoms may gradually disappear, and at last be altogether absent. In other cases there may for a long time be evening fever, generally moderate, at times high, there being at the same time scarcely any fever in the morning; the condition of the patient improves and the fever ceases. Fever dependent on a complication ceases with the removal of this, makes way for occasional evening fever, and with gradual improvement of the patient's condition passes into apyrexia.

31. Rest and treatment, such as is obtained for poor and overworked patients in an hospital, may, when tuberculosis is not far advanced, so relieve the fever in spite of the progress of the local changes, that patients entertain a deceptive notion of recovery, which induces them to leave the hospital too early and indirectly leads to relapse.

32. When the deposits are multiplying, but before any tendency to destruction, there may be a persistent fever, commencing with normal morning temperature and moderate evening exacerbation, and gradually leading to higher fever with occasional very high evening temperature. Multiplication of deposits seems generally to act more pyrexically than their destruction.

33. After considerable hæmoptysis in an early stage of the disease in

which there is as yet no destruction, the fever may at first diminish very much and then entirely cease.

34. Chronic and slowly progressing tuberculosis in the absence of any complication, and without any appreciable cause, may present even in an early stage a highly febrile curve. In favourable cases this gradually disappears, the disease stands still, and the patient is again apparently healthy.

35. There is no method of investigation which has so great importance in the diagnosis and prognosis of not very advanced tuberculosis, as careful and protracted observation of temperature.

36. If the disease run a bad but slow course without breaking down and the formation of cavities, the fever may remain moderate until almost the end, and then under the influence of collapse become mild; under these conditions, however, there is often from an early period a highly febrile course, especially in the evening, proving that high fever is by no means solely dependent on the absorption of the products of destruction.

37. The truth of this proposition is confirmed by the fact that in cases of fatal chronic broncho-pneumonia with destructive foci and cavities the fever may be slight or moderate, and may present slight, fluctuating or high remissions. With ordinary chronic broncho-pneumonia there may be a high evening temperature and a low morning temperature even at a period when the latter is not influenced by collapse, and in other cases both morning and evening temperature may be high, notwithstanding the action of terminal collapse. This latter condition may be manifested by isolated, temporary, and very considerable coolings. Finally, in some cases, the whole curve is irregular, and in others the inverted preponderates over the ordinary type.

38. Should the tuberculous inflammatory deposits have originally rather an interstitial seat, the extra-bronchial connective tissue proliferation exceeding the broncho-alveolar processes, then breaking down, formation of cavities, and a destructive process quite similar to a purer broncho-pneumonic process would take place. The course of the temperature under these conditions would present no peculiarity, but it is to be remarked, that high fever may occur in these cases as well before breaking down and with very slight formation of cavities, even without this formation, as with a rapidly destructive course of the disease.

39. If towards the end of ordinary chronic tuberculosis a profuse deposit of granular tubercles—miliary tuberculosis—should occur, the fever in rare cases is much increased, but usually presents no change, and even when one observes high morning and evening temperatures with slight remissions, the curves and the history of the disease will often show that this character of fever had existed before the invasion of the miliary tuberculosis. A similar high course of temperature is indeed often seen in cases in which there is not any terminal multiple formation of granulations.

40. Acute and subacute miliary tuberculosis of the lungs, which are often only the results of infection from older deposits, but which may occur also as primary affections, present just as much fluctuation in temperature as the chronic disease. The fever may be slight or moderate, and especially considerable in the evening; it is high at first and after-

wards becomes more irregular, being sometimes high and at other times low. In other cases there is a prolonged high and but slightly remittent fever, which served with early observers as the type of the temperature of acute tuberculosis. Such cases, however, constitute the exception and not the rule.

41. The same occurs in acute miliary tuberculosis of the peritoneum and meninges, in which latter indeed protracted high fever is a rare phenomenon.

42. In all these acute and subacute instances the temperature may rise or fall towards the termination. There is, however, a decided tendency to a high rather than to a low terminal temperature.

43. A full view of the course of temperature in miliary tuberculosis shows that there is generally fever, sometimes moderate, sometimes high, and occasionally undergoing many changes in the progress of the disease. Near the end collapse may act in lowering both the morning and evening temperature, especially the former. In relation to these changes the remissions would also vary in intensity. The maximum or minimum temperature may be observed in the middle of the day, and there may be more or less of the inverted type. The highly pyrogenetic influence of rapidly multiplying miliary tubercles has therefore been much exaggerated.

44. If tuberculosis runs a relatively rapid course as a result of diffuse pneumonia of an upper lobe with breaking down and secondary deposits, the early phase is usually highly febrile; at a late period however the fever is reduced. I have not, though, taken a sufficient number of thermometrical observations in cases of this kind, to permit me to establish any rule on my results.

45. If diffuse pneumonia should occur as a temporary complication of not very advanced tuberculosis, the fever is universal for a time, whilst towards the end of the pneumonia it is much less, or quite absent.

46. In cases of putrid bronchitis, through decomposition of mucus, the temperature, according to my experience, is not modified. It may result differently when this complication leads to small gangrenous deposits about the bronchial terminations.

47. When tuberculosis arises slowly from pleurisy, the pleuritic curve, with usually a moderate morning and evening temperature, and occasionally only a high evening temperature, predominates for a long time. The pleuritic curve with an exceptional very high temperature also predominates when to previously existing slight tuberculosis is added considerable pleuritic effusion, and lasts until the fluid is absorbed and the fever ceases. A pleural effusion occurring and increasing in connexion with advanced tuberculosis does not influence the temperature to any remarkable extent.

48. With pneumothorax the temperature in most cases rises rapidly by several degrees, but then, in consequence of the profound shaking of the whole organism, the shock rapidly falls again, and at a later period returns to the ordinary pleuritic or tubercular fever type. If the pneumothorax be cured, and the tuberculosis remain at a standstill, the fever gradually ceases.

49. Deep laryngeal ulcers and even extensive intestinal lesions have no very great influence on the temperature, although it might be

imagined that long-continued diarrhœa would cause a reduction; on the contrary, a febrile, protracted intestinal catarrh, with dubious signs on the part of the lungs, and in the absence of a typhous process, would at an early period render highly probable the diagnosis of a tubercular affection.

50. Terminal inflammations may give rise to a remarkable elevation of temperature, but generally do not influence the temperature very much, and with regard to thermic indications may remain latent.

51. Perforative peritonitis may, when it runs a speedily fatal course, result in very considerable cooling (in one case the temperature was 34°). When death is postponed, this considerable depression is wanting.

52. Lardaceous degeneration and suppurative affections of the bones and joints, have no striking influence on the temperature course of tuberculosis.

Influence of Pregnancy and Lying-in on the Course of the Temperature in Phthisis.

53. In some instances pregnancy and lying-in have no injurious influence on the course of tuberculosis; these conditions, however, usually act prejudicially, favouring the increase and the breaking-down of the deposits, and not unfrequently conditioning acute terminal miliary tuberculosis.

54. In the above-mentioned rare and favourable cases in which the progress of the disease is slow, or the disease is brought to a stand-still and the condition of the patient much improved, the curve is but slightly febrile, or the fever may altogether cease.

55. The fever may, indeed, be moderate: subnormal in the morning, at 38° or 38°·5 in the evening, and sometimes above this; and yet the tuberculosis may, after the lying-in, run a progressively destructive course. In other similar cases, the fever at first is moderate, and increases more and more in the course of the disease; in some other cases, again, the fever is high at first, and at a late period becomes moderate and even low, notwithstanding the rapidly fatal course.

56. If the morning fever be low, and the evening temperature considerable, the curve will be a steeply remittent one; whilst the remissions are slight when, what with this influence is by no means rare, the fever continues to be high in the morning and evening; still, the remissions may now and then, with very high evening fever, appear for the time to have much importance.

57. In such cases the inverse type may predominate. The terminal temperature in tuberculosis influenced by pregnancy, and the condition of lying-in, is subnormal or normal in two-fifths of the cases, whilst in three-fifths of the cases death takes place when the temperature is elevated, though not to a point beyond 39° C.

Art. 2.—*On Miliary Tubercle of the Pharynx and Larynx.*

By M. Isambert.

(*Gazette Hebdomadaire*, No. 2, 1873).

M. Isambert presented before the Société Médicale des Hôpitaux of Paris a preparation taken from a patient who, whilst living, was twice brought under the notice of the Society. This patient presented the form of chronic angina which has been designated by Isambert as *grey disseminated granulations* of the pharynx. A woman who suffered from the same morbid condition, and whose case had been reported by M. Isambert in his memoir on scrofulous angina, died at about the same time from phthisis. M. Isambert then pointed out the analogies which existed between this particular type and granular phthisis, and he expressed the opinion that the second patient would probably die in the same manner. This view was unfortunately confirmed by the event, and the patient died cachectic and with the lungs crammed with grey granulations. Granulations from the pharynx were carefully examined under the microscope by M. Troisier, who found that the granulations taken from the velum palati, the uvula, and from the general pharyngo-laryngeal surface, were identical in structure with the grey granulations found in the lungs. These results were confirmed by M. Vulpian. This identity permits us now to associate with tuberculosis that morbid process which M. Isambert at first attributed to scrofula. There are thus two forms of laryngeal phthisis, one the ordinary laryngeal phthisis which corresponds to chronic pulmonary phthisis that which terminates in caverns. This laryngeal phthisis is from the first an intra-laryngeal affection, and proceeds by deeply extending ulceration, by perichondritis, by necrosis of the laryngeal cartilages, the morbid cause being very analogous to that of pulmonary lesions.

The second form which, on the contrary, corresponds to the acute grey granulation of the lung, should therefore take a different clinical course. Its seat at first is the pharynx, and not the larynx. The grey granulation, which is developed on the mucous membrane, becomes softened and partly destroyed, and is surrounded by a small ring of ulceration, but it does not produce the ravages which so often result from the other form of laryngeal phthisis. Finally the larynx is attacked but secondarily by the granulations, the patient does not die in consequence of œdema or constriction of the glottis, but succumbs, before the time when these lesions might be produced, to the progress of the pulmonary diathesis and to general marasmus, and in part also to the inanition due to the pharyngeal ulceration and the resulting dysphagia. The parallel of the two clinical forms confirms then the difference established by pathological anatomy between the two pathological forms of tuberculosis of the throat.

Art. 3.—*Anatomical Relations of Pulmonary Phthisis to Tubercle of the Lungs.*

By Wilson Fox, M.D.

(*Medical Times and Gazette*, March 22, April 5 and 19, 1873.)

According to arrangement, the meeting of the Pathological Society on the 18th March was set apart for the discussion of the anatomical relations of pulmonary phthisis to tubercle. This the President, Sir W. Jenner, Bart., briefly announced, and Dr. Wilson Fox proceeded to introduce the subject. He said that when asked to introduce this subject he had felt its difficulty; but as the Council of the Society desired the discussion he would endeavour to bring it forward to the best of his ability in a manner calculated to elicit the opinions of other members of the Society. There were very many important points connected with the subject of tubercle—so many that it might be said to be illimitable; but he would deal with the whole briefly, and would pass on one side those things which were not essential to his argument. Moreover, in the debate many would be better able to represent certain of the views now currently maintained than he would, so he would pass by the opinions of others, and base his remarks on his own observation. The debates as to the subject of tubercle now extended over two centuries, and it would be impossible to take up the whole history of these in the limited time at the disposal of the Society. He would also on the present occasion, as already notified, adhere to the subject of tubercle as it bore on that of phthisis, for on this connexion depended its main interest. True, Niemeyer's view was quite the reverse—that phthisis was mainly non-tubercular; still, he held that phthisis was tubercular, and therefore would deal with the subject in this sense. The clinical varieties of phthisis he would not deal with.

During the last century there was a gradual recognition of tubercle as the cause or basis of phthisis, but by-and-by a discussion arose whether this was allied to scrofula—a discussion which continues to the present day. Early in this century the subject assumed another phase. Bayle, in studying tubercle, came to regard it as something specific—*sui generis:* whilst others, as Hoffmann, maintained that the lesions produced by tubercle were merely the result of inflammation. Between these two views was the main dispute: both looked upon tubercle as a blood deposit, but in other respects they differed. Still, the deposit was called tubercle, whether grey or yellow, hard or soft. Tubercular infiltration was first spoken of by Bayle, and the expression and idea were continued by Laennec, who might be said to have solidified the floating views on the subject of tubercle. These both, however, considered certain grey deposits (now called pneumonic) tubercular, and they took the yellow or crude tubercle as their type. Whatever became dry and yellow, therefore, they called a tubercular deposit. Such were the views held by Laennec and Louis, and they continued in vogue till the time of Virchow. This pathologist said that yellow caseous matter might be produced in many ways; hence it could not be the type of tubercle. He accordingly chose the grey granulation as the type of

tubercle, though Bayle had doubted its tubercular character. This was in a certain degree arbitrary, as excluding many things heretofore considered tubercular. Some of these, Virchow said, were dried-up pneumonic deposits. The causes of this caseation required, however, in Dr. Fox's opinion, more definition, and he also doubted whether tubercle can appear in the lung solely in the shape of the grey granulation. However, these views of Virchow were largely accepted and extended, especially abroad, and they found their culmination in Niemeyer's doctrine, according to which phthisis had really nothing to do with tubercle—it was an inflammatory malady, and the presence of tubercle was secondary and accidental. Thus ideas as to tubercle become completely inverted — it was no longer the typical mode of producing phthisis, but merely a secondary complication.

Dr. Fox expressed himself as strongly impressed with Virchow's views after studying in Germany, and gave expression of them in his teaching; but dealing practically with pathology, he soon found himself in a difficulty, being unable to say what was tubercle in a lung and what was not. Finding he could not say what was what, the plan he adopted was to get drawings made and descriptions written of each specimen; but he had to go over the whole subject again. Finally, he came to the conclusion that we had to deal with tubercle as a disease, and set himself to work on the lungs of children who had died of acute tuberculosis. These researches led him to believe that we must either draw a purely arbitrary line in saying what was tubercle and what was not, or to study what were the essential and characteristic appearances in such lungs as these. He took the lungs of these children as his type, but in the lungs of adults dying of phthisis the same changes, to all intents and purposes, but certain variations were encountered. He found, moreover, that the grey granulation (strictly so called) was not so common even in the lungs of children as might be expected, but one larger and more opaque was that most frequently found. Besides these two forms of tubercle there were various others, the nature of which had been laid before the medical public in the abstract already given. He seldom found any one kind alone. Sometimes the grey granulation was thus found alone, but only twice in eleven cases specially analysed. The tubercles seen were mostly larger than these, and somewhat altered, and with them were associated other changes. The grey granulation was also difficult to find microscopically in the lung-tissue proper. It was composed of minute cells the size of white-blood corpuscles, or smaller than these, enclosed in a fine reticulated network. This network was always encountered, except in the very recent grey granulations, where there might be said to be no room for it, for in the earliest stage a grey granulation might consist of small cells and apparent nuclei alone. Sometimes they found large multiple nucleated cells, but never isolated; so that these might sometimes be said to be made up of masses of nuclei enclosed in protoplasm. Between these large cells and the small cells were many intermediate forms, but the small was the typical cell-form in tubercle.

In the alveolar structure of the lung, however, this typical growth was mixed with other products, having the appearance of the epithelial or other cells normally found in the alveoli, or a development from

them. But here also was to be found in the walls of the alveoli and bronchioles the same reticular structure and small cell or nuclear growth as in the grey granulation, though the relative proportion of these might vary. Many yellow tubercules were the result of acute caseous change in many air vesicles, so that sometimes large tracts were affected. Other changes, too, were manifest besides the caseation going on inside the air vesicles; there might be thickening of the wall of the alveolus till the cavity was almost obliterated. This was especially the case where the yellow tubercle was passing into the grey. Probably, he thought, the reticulum in many cases was composed in part of obliterated blood-vessels.

There might be said to be three changes in the lung in general tuberculosis — the grey granulation, epithelial proliferation in the alveoli, and growth in the alveolar wall. This same growth might occur in large tracts, causing obliteration of the vessels in the course of the infiltration. All had the same fundamental structure. In this way, therefore, the grey granulation could not be looked upon as the typical form of tubercle; at all events, the others were much more abundant, so that we had to conclude that we had to deal either with two diseases in the same lung, or one disease in two forms. He would assume that the latter was the correct view to take.

Sometimes a typical caseous change might occur in large tracts. This was called tubercular pneumonia, but it was totally different from ordinary acute pneumonia. In the former the capillaries were obliterated; but this was not the case in ordinary pneumonia. He believed the death and caseation of these tracts were due to the destruction of the capillaries. This might be acute or gradual, and the acuteness of the disease regulates the occurrence of caseous change or thickening of the parts. The change tended under such circumstances either towards growth or death — *i.e.*, caseation—and this he considered due to the loss of the vessels of the part. The fibrous change, might, however, take place; and shooting into the masses of tubercle in young children might be seen bands almost resembling those of growing and ossifying periosteum. Here we had the grey granulation passing into the fibrous state. This, however, was only part of the general question of the disease-process, and had long been known.

All these changes—caseous infiltration, pneumonic products, reticular growth, hardening, and infiltration—occur in typical acute tuberculosis. If they are seen in an emphysematous lung, a worm-eaten appearance was the result. In some organs tubercle might occur without inflammatory products, but in the lung the two were generally associated; and there was usually a fair proportion of inflammatory products in tuberculosis of the pericardium, pleuræ, and meninges. In these, too, inflammation might go first, and tubercle come after; but, as a rule, they go together. What part does each respectively play in the lung? He thought infiltration of the alveolar wall the most common and most important, but the two kinds of changes were found almost invariably in combination in all. He would not attempt to define tubercle exactly, but it might conveniently be said to be an overgrowth of lymphatic elements produced by irritation, general or

local. Wherever lymphatic irritability was excessive, there tubercle might be produced, whether as the result of simple irritation or inflammation. He doubted if it was constituted by wandered white blood-corpuscles; but the same cause which produced tubercle in parts having this lymphatic structure might also produce inflammation—so both may be produced at the same time, or the one may follow the other.

Phthisis occurred mainly in two forms, merging the one into the other—one acute, the other chronic. In the acute form yellow and grey infiltration occurred. In scrofulous pneumonia large infiltrations in various forms occurred, but other forms of caseous change were also seen in little spots. But in all the new growth was identical with that occurring in acute tuberculosis. It was no mere accumulation of dried puriform matter, but something differing totally from a simple pneumonic process. In chronic phthisis there was more variety. In that there was always induration, but the induration began in the same way as the tubercular growth. Whole groups of these tubercles might be seen converted into a fibrous tissue not unlike tendon, and between the two were all intermediate stages. It might however occur in parts affected by pneumonic change by means of fibrous thickening. These, however, as far as his observation extended, were in the vast majority of cases associated with tubercles in other parts of the same lung. These indurations have been called the results of peribronchitis, but they really begin as tubercle, and the indurations are always mixed with the various types of the new growths. In short, a similar growth may be found in all parts of the diseased lung, whether it was called tubercle or induration. He concluded, therefore, that, whether in acute or chronic phthisis, the foundation of the change was tubercle.

On Tuesday evening, April 1st, the discussion on tubercle, introduced by Dr. Wilson Fox at the previous meeting of the Pathological Society, was resumed. The first speaker was Dr. Moxon, who in the main corroborated the views of Dr. Fox, except as regards the adenoid structure of tubercle. In reality, he said, it had no characteristic structure and no specific character. Thus, he said, in a child killed by being run over in the street, there were found marks of old bronchitis, caseous glands at the root of the trachea, and the lung all round these stuffed with tubercle. Here was a direct change from simple inflammation of the bronchi to tubercle. Where did the specificity commence? It was only a form of inflammation. He held that tubercle was due to caseation, but would not admit with Niemeyer that it was mainly due to the caseation of pneumonia. In the early stage of phthisis you never find this pneumonia extending. Phthisis is always tuberculous, and the earlier it is seen the more tuberculous is it. He held to Buhl's theory, but not to Niemeyer's adaptation of it. Dr. Moxon concluded a most amusing as well as an instructive speech by reference to fibroid phthisis, which he characterized as a mistake in every way.

Dr. Cayley followed: he also denied the adenoid structure of tubercle. He alluded to the existence of giant cells in tubercle, according to the views of Schüppel. Finding many things in the same lung, they were

assumed to be alike tubercular. The whole question, he considered, was not yet ripe for settlement; still he thought that if they were to speak of tubercle at all, the terms should be limited to the grey granulation, whilst in many cases the changes were the result of inflammation, and the tubercles were secondary.

Dr. Beale thought the tubercle corpuscles had nothing whatever to do with lymph corpuscles, nor that the alveoli of the lung were covered with lymphatics. He could not understand how any irritation could convert a lymph corpuscle into a tubercle corpuscle. The word irritation was used all too vaguely, and Virchow's views with regard to it were untenable. Tubercle, he said, was not easily defined; it consists of living matter, and possesses the power of growth, but there is a difference between its living matter and that of cancer and pus, though the distinction is not possible either by the microscope or reagents. Nevertheless they are not identical—the life history is quite different; pus grows and multiplies at a greater rate than does tubercle, and tubercle than cancer. So, too, the matters resulting from the death of these are different. Yet all are composed of living matter, though differing in important respects, just as the embryo of the dog does from that of man. He assented to the doctrine that tubercle was a specific body. There are many structures in tubercular masses, though we cannot distinguish them. Under different conditions of growth they give rise to very different forms of material.

Dr. Bastian assented in the main to Dr. Wilson Fox's facts, but differed as to their interpretation. He entered at some length into the history of the subject, and was disposed to think they had better drop the word tubercle altogether. He thought Dr. Fox had been influenced, as Dr. Sanderson was, by the inoculation experiments. Yet these experiments had upset the idea of specificity, inasmuch as almost any irritant would set up the morbid changes which result in the material commonly called tubercle. That this was really tubercle he had never thought. This had an adenoid structure, it was true; but in many conditions in man, as in leucocythæmia and Trousseau's *adénie*, such structures were found and were not called tubercular: Why call it tubercle in rodents? In reality it was strikingly different from tubercle. He thought the restriction of the word tubercle to the grey granulation a difficulty, and would therefore drop it. In chronic phthisis the elements were most Protean; there were epithelial elements, overgrowth of connective tissue, and lymphoid corpuscles.

Dr. Payne came next. He thought it most important to consider the chronology of the various products found in a diseased lung. This was not simple in most cases, for even in the best marked ones we cannot assign exact dates to the various products. Generally we find grey granulations along with inflammatory products. One of these must have originated first, and he fancied it was sometimes the one and sometimes the other. In a preparation which he showed there was a tubercle with air-cells in its neighbourhood, showing various inflammatory changes, as also a bronchus showing the results of bygone change, but there were no signs of change in the tubercle; so that we were bound to conclude that inflammation of the bronchus had preceded the

tubercle, whilst he thought the changes in the air-cells depended on the tubercle. We always find tubercles of different sizes and ages, and those beginning to be caseous were generally complicated with inflammatory changes. He held that tubercle could be produced by inflammatory matter, and this infection might act as in pyæmia, either directly or on parts at a distance through the agency of the blood-vessels. No argument could dispose of the position that both kinds of changes might be produced by a common cause. He was by no means certain that the catarrhal disease which commences phthisis was of a simple kind. Often, too, he said, the structure of a tubercle varied with the direction of the section examined.

Dr. Powell considered acute tuberculosis as dependent solely on the grey granulation—a very definite form of disease. In these miliary tubercle of the lung is not accompanied by pneumonia. There might be epithelial shedding, but that is to be found in any hyperæmia of the lung. There was no tendency to break up, but rather to fibroid change. That was not phthisis, but tuberculosis of the lung. In subacute phthisis with local tubercle in the lung, there was always catarrhal pneumonia tending to break up the lung. It was not easy to remove inflammatory products from the lung; they were often retained, and tended to set up inflammatory changes. The motion of the parts and the exposure to the air of these products had also to be considered as a cause of disease. He did not think that specificity was at all necessary.

On Tuesday evening, April 15th, the discussion on the relations of tubercle to phthisis was resumed and brought to a close. The speakers were Drs. C. J. B. Williams, Green, Crisp, Pollock, and Burney Yeo. Dr. Wilson Fox also replied to the various objections brought against his views.

Dr. C. J. B. Williams thought the discussion had been too much one on words—what things should be called, rather than what they are. The material found in the lungs had been called a "growth;" if so, it was a despicable one, for its chief characteristic was a tendency to decay. No doubt tubercle resembled lymphatic tissue, but it was not a simple overgrowth of that tissue, otherwise we should have an increase in the trabeculæ as well as in the corpuscles, which we do not. Tubercle was mainly a corpuscular growth, and was a diseased condition of that portion of lymphatic tissue only. The corpuscles were hardened as well as multiplied, and in some also there was a fibroid element. These corpuscles were identical with the colourless corpuscles of the blood, and his notion as to their origin was either that they began in the lymphatic system as a miliary tubercle or were the results of inflammation and migration from the blood-vessels. Fibroid phthisis he considered a reality; it was not a thing of the past time only. And the fibrous material he believed to be primordial fibrous elements formed directly from blood plasma, and not from connective tissue. The basis of the fibroid disease was the tendency to contraction; of the corpuscular form, to caseation and infection. These together constituted the bases of consumption.

Dr. Green said the change found in a tuberculous lung was of two kinds—viz., accumulation of large epithelial cells in the alveoli, and small cells in the walls of these. The former was commonly called a pneumonic product, the other described as tubercular. In reality they were the result of the same process, and this process was essentially inflammatory. The preponderance of either would depend on the intensity of the process. In many cases of tuberculosis they were so intimately associated that it would be impossible to speak of them as cause and effect. It was not a question of the one producing the other: both were produced by the same cause. The more intense irritation tended to cause proliferation of the epithelial elements of the alveoli; the less, the growth of the adenoid elements of the walls. Frequently the small cell growth tended to become fibroid, whilst the large cells tended to caseation and death—this being in part due to their remoteness from the blood-supply.

Dr. Crisp thought we should do no good in the investigation until we altered our modes. We should begin with the lowest organism in which tubercle was found, and gradually ascend the scale. Tubercle was to be found in all animals except fishes, and even in them when grown in overstocked ponds there was something analogous to it. But in the phthisis of the lower animals there were no hæmoptysis and no cavities. He thought the results of inoculation were more akin to pyæmia than tuberculosis.

Dr. James Pollock held that our views were still transitional. We had displaced Laennec and Louis, though these observers had been marvellously successful in adapting themselves to the clinical side of the question. Laennec erred in asserting the specific character of tubercle as far as one entity was concerned, and he was glad to find Dr. Fox falling back on doctrines such as were advanced in his opening address. This was no retrogression, but a true advance. Niemeyer's school had come to look on tubercle as altogether a secondary matter in phthisis. For his own part, he objected to catarrhal pneumonia being made the essential element in phthisis. He was inclined neither to accept the views of Laennec nor the inflammatory theory absolutely. He believed in the specific character of tubercle. By whatever name it was called, no one would admit that common catarrh or hæmoptysis was the cause of phthisis. Behind all these there was something specific. He believed the varieties of phthisis to be these—acute miliary tuberculosis without ulceration, tuberculosis with ulceration, fibroid phthisis, and that depending on inflammatory deposit. According to the character of the preponderating growth, so was the character of the phthisis. He believed that lymphoid phthisis was the old scrofulous phthisis.

Dr. Burney Yeo said there had been no difference as to facts, but in the debate one side of the subject—viz., the pathological—had been too much considered, whereas we should consider the whole life-history of the disease. It was said not to be specific, because there was no specific structure, but histological identity was not the same as living identity. It had been argued that all the changes were inflammatory; this might be simple, but it was not satisfactory. There were two main forms of

phthisis—the tubercular and inflammatory. The chronic form of phthisis was largely inflammatory; the acute mainly tubercular. The two originated differently.

Dr. Fox replied at length to the various speakers, and the meeting adjourned.

Art. 4.—*A Contribution to the Clinical Study of the Etiology of Pulmonary Tuberculosis.*

By Austin Flint, M.D.

(*New York Medical Record*, and *Medical Times and Gazette*, May 24.)

This paper is based upon the results of the analysis of 670 cases observed during a period of thirty-four years, 448 of the number occurring in private, and 222 in hospital practice. From a careful examination of this extensive field of observation Dr. Flint arrives at some interesting conclusions:—

1. *The Influence of Sex in the Etiology of Pulmonary Tuberculosis.*—In private practice there were 321 male to 127 female patients, and in hospital practice 187 males to 37 females. United together the number of male cases was 505, of female 164, the former being nearly two-thirds in excess of the latter. The result of this analysis is at variance with the statistics of Louis, who found that of 123 cases observed at La Charité (where the beds were equally divided between the sexes) there were 66 women and 57 men. "This variation, perhaps, illustrates the liability of such statistics to be affected, at different times and places, by extrinsic circumstances which are not always readily determinable."

2. *The Influence of Occupation.*—Among the male cases in private practice the occupation was noted in 212. As many as seventy different occupations were represented. Clerks presented by far the largest contingent, being thirty-two in number, and allied to them were four book-keepers. The number of physicians was thirty, and that of medical students eight; "but, doubtless, circumstances of a personal character determined the number of the representatives of the medical profession, so that this number is not to be considered as any evidence of the influence of the calling on the etiology of the disease." Merchants numbered fifteen, lawyers fourteen, and farmers eleven. Passing over Dr. Flint's enumeration of the less frequently occurring occupations, we come to his hospital cases. The occupations in 158 of these were noticed, and forty-eight such occupations were represented. That of "labourer" far outstripped the rest, being sixty-nine in number, this occupation, in fact, much predominating among the admissions. The general conclusion arrived at with respect to cases both in private and hospital practice is that sedentary occupations with confinement within doors, often in small, heated, ill-ventilated rooms, are a prolific cause of the disease.

"Making due allowance for the circumstances which determine men of different occupations to resort to hospitals, the result of this numerical analysis of my cases in hospital practice corresponds to that of the analysis of cases in private practice. The general conclusion is that

occupation has an agency in the etiology of pulmonary tuberculosis, in so far as it is sedentary and involves confinement within doors. If it be said that this conclusion is in accordance with what is already known, I answer that the correctness of the conclusion is thereby made the more certain. My object is to study, by means of numerical analyses, my cases without reference to the researches of others, and if the results of my analytical investigation are in conformity with those which have already been obtained this is certainly no disparagement of their correctness, nor does it impair their value as a contribution to our knowledge."

3. *The Influence of Antecedent Diseases.*—This point Dr. Flint pursues at considerable length, but we have only room for his summary:—

"1. Inflammatory affections within the chest—namely, pleurisy, pneumonia, and bronchitis—have very little, if any, causative influence in the development of the disease. 2. Hæmoptysis, when it is not a symptom of existing pulmonary tuberculosis, should be considered as having the significance of a prodromic event, but there is no clinical evidence of its standing in a direct causative relation to the disease. 3. The absence in my collection of any cases in which asthma, emphysema, and organic affections of the heart were antecedent affections, may be noticed as sustaining the opinion that these affections are antagonistic to the liability to pulmonary tuberculosis. Here I refer to 'negative facts,' and they are subject to the qualifications stated at the beginning of this paper; but it is certain that in the considerable number of cases in which the previous health was noted, if these affections had existed, their existence would have been entered on the records. 4. Of the antecedent 'general diseases' the number of instances in which intermittent fever had existed might perhaps lead to the conclusion that malaria is to be reckoned among the causes of pulmonary tuberculosis. But when it is considered that nearly all my cases were observed in sections of country more or less malarious a large allowance has to be made for mere coincidence. Hence that malaria does not protect against tuberculous disease is the only deduction admissible. With regard to other essential fevers—measles, small-pox, typhoid and yellow fevers—the number of cases in which these diseases existed antecedently is so small as to afford little, if any, evidence of an etiological influence referrible to them. 5. My cases afford no evidence that scrofula (meaning by this term an affection a distinctive feature of which is enlargement and suppuration of the cervical glands, leaving characteristic cicatrices) enters into the etiology of pulmonary tuberculosis. 6. The results of my analysis go to show that, aside from the diseases named in the foregoing propositions, there are none which are to be considered as involving a special tendency to the subsequent development of pulmonary tuberculosis. Twelve additional diseases only appear on my records; of these twelve eight are severally represented by a single case. Those which are represented by more than one case are dyspepsia, perineal fistula, rheumatism, and syphilis. The number of cases representing these is altogether too small to give evidence of a causative relation. There is no evidence derived from my analysis to sustain the hypothesis of Niemeyer, which attributes the production of miliary tubercles to the absorption of morbid products in different parts of the body.

"In conclusion, the result of my analysis, in so far as it has extended, sustains the doctrine that pulmonary tuberculosis is eminently a diathetic disease; that is, it arises from an internal or constitutional determining agency, which it has been customary to designate a diathesis. Assuming this to be a correct conclusion, it would be unprofitable to speculate concerning the essential nature of the diathetic condition. Taking, however, this conclusion as a point of departure, it remains to determine, by clinical studies, the causes of the tuberculous diathesis. As regards this object there are various points of inquiry, prominent among which are questions concerning habits of life, congenital disposition, hereditary influence, and, perhaps, contagion. I reserve an analysis of my cases with reference to these and other points for some future occasion."

Art. 5.—*On the Infective Product of Inflammation.**

By J. Burdon Sanderson, M.D., F.R.S.

(*The Lancet*, May 24.)

The paper contains the results of researches made, for the most part during the early part of 1872, for the purpose of elucidating the pathology of secondary inflammations. It is divided into three parts.

In the first part the nature of the process of inflammation is treated of, with special reference to the question how a primary inflammation gives rise, on the one hand, to general constitutional disturbance, and on the other, to the establishment of new foci of inflammation in parts remote from the original seat of irritation or injury. To distinguish those inflammations which exhibit the tendency to produce the effects in question the author uses the word "infective," understanding it to express two sets of characteristics—one relating to what occurs at the original seat of inflammation, the other to the induced effects which manifest themselves elsewhere. Of the two groups of phenomena, it is obvious that those which are remote from the seat of primary action claim most attention in relation to the present inquiry. They consist partly in the springing up of new foci of irritation or inflammation along the course of the infected channels, partly in the occurrence of changes in the blood itself (not yet investigated) of such a nature as to show that it is impregnated with an infective poison. In investigations made by the author in 1867-68, one branch of the question of phlegmonous infection was worked out with some completeness. It was then found that when, in the lower animals, particularly in guinea-pigs, local inflammations are produced either in the skin or the peritoneum by the introduction of irritant substances, two distinct sets of consequences manifest themselves—namely, on the one hand, the production of a chronic disease, affecting all the internal organs, having the characters of a chronic interstitial inflammation (*i.e.*, irritative germination of the interstitial tissues of the lung, liver, spleen, &c.), resulting in slow

* Read at a Meeting of the Royal Medical and Chirurgical Society, May 13th.

caseous or fibrous degeneration, and destroying life by a gradual process of wasting; on the other, an acute process in which the same organs and tissues are affected much more rapidly, and in which we have to do with two additional elements—namely, fever and the formation of abscesses in the irritated tissues. To both of these processes the author applies the word "infective," as in certain cases both appear to spring from an infection derived from the same source—*i.e.*, from the same primary inflammation—and progress in the same animal at the same time.

The second and third parts of the paper are entirely occupied with a summary of the experimental results. After a short account of the work of previous years, the author proceeds to give a detailed description of the more recent experiments on which his conclusions, so far as relates to acute secondary inflammation, are founded. These are divided into two series. In those comprised in the first series, the liquids of acute inflammations of great intensity were used, and the induced disease exhibited those characters which are expressed by the word septicæmia. The results of these experiments, 27 in number (which were shown to the Society in a table), may be summed up as follows:—Of the 27 experiments, serous liquids were employed in 18; liquids of subcutaneous suppurations in 4; liquids from softened and infective nodules and lymphatic glands in 3; and in two others the contents of an inflamed uterus. The table also exhibited another experiment in which the blood of an infected animal was used. All these liquids were employed immediately after their removal from the living body of the diseased animal, and contained at the time bacteria. The animals observed were guinea-pigs, dogs, or cats. In 4 cases the liquid was injected into the jugular vein; in the rest into the peritoneum. The quantities used varied from three minims to twenty-four minims. Although the liquids were similar, all being products of rapidly-progressing infective inflammations, the induced results were not all of equal intensity. In 20 out of the 27 experiments tabulated, death took place within twenty-four hours. Of these, all excepting 3 received the excitant in the peritoneum. Peritonitis existed in every case, and it was observed that it was no less intense in those cases in which the liquid was injected into the jugular vein than in the others. It was also observed that after injection into the peritoneum the pleura and pericardium were often found to be as intensely inflamed as the peritoneum itself. In all but very rapid cases the peritoneal exudation exhibited the same character. It was viscid and coagulated imperfectly. It contained pus-corpuscles in small numbers and the liquor puris often exhibited, when subjected to examination with high powers, a tremulous movement of the liquid, which was found to be due to the presence of extremely minute rods. In almost all the experiments tabulated the blood exhibited microscopical appearances which were striking and unequivocal. The liquor sanguinis contained rod-like particles, and possessed in some instances a peculiar viscidity, the nature of which must form the subject of future investigation. In the larger animals death is preceded by phenomena which resemble those of putrid infection. This is shown in the paper by a careful comparison of the symptoms with those described by Bergmann as resulting from the injection of putrid liquids into the veins. It is

however, to be observed that the quantity of a putrid liquor required for the production of the same effect is incomparably larger than that employed in the present experiments.

In the course of the experiments of this series it was repeatedly observed that inflammations of a highly infective character, yielding exudation products rich in septic microzymes, may be induced by the introduction of chemical irritants either into the subcutaneous tissues or into one of the great serous cavities, even when liquids used are themselves distructive to the life of these minute organisms, or have been subjected to prolonged ebullition immediately before, and when all other precautions are adopted to guard against the possibility of septic contamination from without.

In the experiments of the second series, the infecting liquids used were not products of what might be called virulent inflammation, but of more slowly progressing inflammatory processes, chiefly characterized by softening or unhealthy suppuration, either of nodules or previously consolidated or infiltrated tissues. In the examples given, the material was derived in each instance from the diseased lungs of human beings or animals affected with chronic pulmonary tuberculosis in the stage of softening. The lesions were substantially the same in all: the serous cavities were inflamed, and contained variable quantities of exudation liquid charged with bacteria, and in most cases there were extensive adhesions and false membranes; and, in all, the viscera contained "infection-nodules," which were hard and firm externally, with purulent centres.

In the concluding paragraphs of the paper the author cautiously expresses the inferences which he thinks are justified by the experimental results. He thinks that it has been shown that the condition which is expressed by the word septicæmia (including under the term, not only septic fever, but also the intense mucous and serous inflammations by which it is accompanied) may be produced independently of the entrance of septic matter from without by the introduction into the serous cavities or into the circulation of liquids derived directly from living tissues in certain stages of inflammation, and that the process by which infective abscesses are formed in various organs and tissues at a distance from some primary focus of inflammation of similar origin, both being due to the existence in the circulating blood of an infective agent which, although of purely intrinsic origin, yet possesses all the characters of a septic poison.

The question of the origin of the infective agent itself Dr. Sanderson regards as entirely distinct from that of the intrinsic or extrinsic origin of the minute organisms by which its presence is declared, for, to quote the concluding sentence of the paper, "It does not at all follow because these organisms come in from outside that they bring contagium along with them. It may be readily admitted that they may serve as carriers of infection from diseased to healthy parts, or from diseased to healthy individuals, and yet be utterly devoid of any power of themselves originating the contagium they convey."

Art. 6.—*Report of a Case of Scarlatina: Parotitis; Extension of Disease to Brain; Death.*

By Balthazar Foster, M.D.

(*British Medical Journal*, May 3.)

At a meeting of the Birmingham and Midland Counties Branch of the British Medical Association, March 13th, Dr. Balthazar Foster related a case of scarlatina which proved fatal by extension of inflammation from the left parotid gland to the brain along the internal jugular vein. The patient was under five years of age, and had been admitted into the General Hospital with well marked scarlatinal rash and slight sore throat. The case was complicated by severe bronchial catarrh, which, however, yielded to treatment; but on the fourth day after admission, parotitis of the left gland began, and was followed by a new crop of the rash. In the course of three days, the left parotid gland was so much enlarged, that the jaws could not be separated. The patient died on the eleventh day after admission, death being preceded by stupor and great exhaustion, but no convulsions. During the last day of life, the enlarged gland was reddish on the surface, but there was no fluctuation. There was no discharge from the ear and no albuminuria during life. The necropsy disclosed a healthy condition of the thoracic and abdominal viscera; the bronchial tubes were hyperæmic; the kidneys healthy to the naked eye and under the microscope. The parotid gland of the left side was found enlarged to four times its natural size; the central part was softened and broken down. The inflammatory mischief could be distinctly traced along the internal jugular vein, through the foramen jugulare to the under surface of the cerebellum. There was great thickening of the walls of the left lateral sinus and clotting in its cavity. The internal and middle ears were healthy and the Eustachian tubes. The tonsils were only superficially ulcerated. Dr. Foster exhibited the parts showing the course of the inflammation, and argued that the parotitis was due rather to the effect of the scarlatinal poison, than to extension of local mischief from the buccal cavity, as in some cases.

Art. 7.—*Case of Multiple Cirrhosis of the Lungs.*

By Thomas Hayden, M.D.

(*Medical Press and Circular*, Jan. 29.)

At a meeting of the Dublin Pathological Society, January 25th, Dr. Hayden exhibited an example of multiple cirrhosis of the lungs, resulting from chronic interstitial pneumonia, together with circumscribed and exaggerated vesicular emphysema, compensatory of the former. A man, aged forty-three, a pensioner from her Majesty's army, who had spent nine years in India, and had, whilst there, fever and ague, was admitted into the Mater Misericordiæ Hospital on the 27th December, 1872. Two years previously his health became deranged, and his respiration embarrassed, with some pain of the chest. Three weeks before the date of admission his feet began to

swell. When in hospital his condition was the following:—He was cyanosed; unable to lie down from difficulty of breathing; the lower extremities were œdematous and livid; pulse rapid and feeble; precordial dulness abolished; the heart pulsated behind the ensiform cartilage. Its action was feeble, and its sounds, which were all but completely masked by loud bronchial râles, were free from murmur. The chest walls were generally hyper-resonant, and loud bronchial râles were audible all over it. Expiration was prolonged, and, in short, all the ordinary signs of emphysema existed, with which it is unnecessary to occupy the time of the Society, with one exception, and that had reference to a phenomenon which, in Dr. Hayden's judgment, had a special diagnostic value. In the lower and back part of the left side, and in the left sub-clavicular region, an auscultatory phenomenon of a peculiar character was heard, both with inspiration and expiration. It might be described as a sibilus, with a metallic quality, and might be conveniently designated as an amphoric sibilus; such a sound as one might suppose produced by blowing through a reed into an empty cask. From this sign localized exaggerated vesicular emphysema was confidently diagnosed. On a former occasion Dr. Hayden laid before the Society the particulars of a case in which, from the evidences afforded by a similar phenomenon, he made the diagnosis of a corresponding state of the lung, and the morbid specimen he then exhibited to the Society confirmed his diagnosis. The urine was normal, and passed in small quantity. The condition of the man underwent alternate changes of improvement and retrogression. The legs were punctured, and a large quantity of serum was thus evacuated. He sank by a gradual process of asphyxia and failure of the right side of the heart, and died on the 19th of January, 1873. The thoracic viscera were alone examined. The lungs were extensively adherent to the chest walls. The pulmonary pleura on the right side was a quarter of an inch thick, and sent strong fibrous bands from its deep surface into a portion of the lung about its centre. This portion of the organ, about four inches square, was perfectly solid, and when cut into grated under the knife, was devoid of air, and exhibited in section dense white bands of fibrous tissue, forming a close network. Examined under the microscope, this portion of the lung exhibited a greatly hypertrophied condition of the connective tissue, with total obliteration of the air-cells. The apex of the lung was blown out into something like a bladder as large as the clenched hand. This was expanded, and overlay the depressed surface corresponding to the contracted and rigid portion previously described. The base of the left lung was the seat of pneumonia in its first stage. It was solid, vascular, and readily broken up under pressure. The upper portion of the inferior lobe formed a bladder-like expansion similar to, but larger than that of the right apex. The apex of the left lung presented a similar condition of over-inflation. These three portions of the lungs were raised considerably above the surrounding surface, were strictly circumscribed, of tympanitic resonance, and fixed in their respective situations. They presented examples of veritable localized vesicular emphysema, consisting of over-inflated air sacs, with partial rupture of the intervening

septa. The anterior edges of the lungs, which were likewise emphysematous, overlay the pericardium, to which they were firmly attached by old adhesions. The lungs were considerably in excess of the normal volume. The trachea and primary bronchi were dilated and congested. The heart was generally dilated and hypertrophied, especially the right ventricle; it weighed eighteen ounces, but was structurally healthy, as were likewise the valves. Dr. Hayden begged to remark in reference to this case, that it was interesting as affording an example of several distinct centres of chronic interstitial pneumonia, followed by hypertrophy and contraction, with limited compensatory emphysema of the lungs. These changes, no doubt, dated from the period of his illness two years previously. The case was, however, especially interesting in a diagnostic sense, as affording an example of an auscultatory phenomenon, which he ventured to regard as pathognomonic of exaggerated and circumscribed vesicular emphysema, and for want of a more convenient term would designate as *amphoric sibilus*. Theoretically, it was not difficult to conceive how this phenomenon was produced. An air tube, of very small calibre, opening abruptly into a large air chamber with membranous walls, would conceivably yield such a sound during the entrance and exit of air correspondingly to inspiration and expiration respectively. The practical value of the sign is, however, of greater importance than the theory of its production; and having now made the diagnosis of the condition of the lung previously mentioned on two several occasions from this sign alone, and having been borne out by the result of post-mortem examination in both these cases, Dr. Hayden ventures to regard it as pathognomonic of the condition mentioned.

Art. 8.—*Report of a Case of Cancer of the Lung.*

By A. W. Foot, M.D.

(*Dublin Journal of Medical Science*, December, 1872.)

At a meeting of the Pathological Society of Dublin, Dr. Foot laid before the members an exceedingly well-marked example of primary encephaloid sarcoma of the left lung, exhibiting at the same time the opposite lung, in order to show its perfect immunity from disease. Drawings of each lung, made while the parts were quite recent, were also presented to the Society. The subject from whom the specimens had been taken was an Italian image-maker, aged fifty-seven; he had been under Dr. Foot's observation in the Meath Hospital for seven weeks before his death, which occurred unexpectedly from red softening of the left corpus striatum, which had induced sudden, right hemiplegia and aphasia, without complete loss of consciousness, lasting seventy hours. He had been ailing for three months before he came into the hospital, and was complaining of dyspnœa on exertion, and of a sensation as if a great weight lay across his chest. Examination of the left chest gave all the physical signs of effusion into the pleural cavity, chronic and receding, as the side was somewhat contracted. The sense of resistance, however, to the finger was different from that given by

fluid; the heart was not displaced, but intense pericardial friction was audible over a space measuring six inches vertically by five inches transversely. After some time the friction ceased and never returned; universal adherence of the layers of the pericardium was found after death. There were neither enlarged glands, œdema of the left arm or thorax, varicose veins, lancinating pains, hæmoptysis, cachexia, peculiar sputa, hectic, protrusion of intercostal spaces, or any of the phenomena which would assist in a differential diagnosis between fluid in the pleura and cancer of the lung, under which name this form of tumour has hitherto usually been described.

After death the left lung was found diminished in bulk, vastly increased in weight, condensed and infiltrated from base to apex with a cream-coloured growth, irregularly bounded, towards the periphery, by a margin of compressed pulmonary tissue of an iron-grey colour. The only tube traversing the centre of the mass was the pulmonary artery, rendered triangular by pressure, and nearly obliterated. The bronchial tubes had quite vanished, and the pulmonary veins could scarcely be made out even at their exit. About an ounce of clear serum lay in the summit of the cone of the pleura; elsewhere the lung was adherent to the diaphragmatic, costal, and mediastinal pleuræ. The opposite lung was perfectly free from external or internal deposit, enlarged in all its dimensions, congested, and possessed a small supplementary fourth lobe. The left lung was fused with the left side of the heart and pericardium, but there was no particular implication of mediastinal glands, so as to form any noticeable tumour. Parts of the infiltrated left lung were softer than others, and in forty-eight hours the thick creamy pulp of this form of sarcoma became very evident on pressing or scraping the cut surface. No organ or gland in the abdomen exhibited any sign of secondary contamination, neither were the axillary or cervical glands infected;—some of the superficial left inguinal glands were slightly enlarged, but not more so than might be caused by cutaneous irritation about the genitals, set up during the seventy hours of hemiplegia. The left side of the arch and the descending aorta were firmly bound to the diseased lung; paralysis of the left recurrent nerve by the pressure had caused an aphonia which suddenly came on about a fortnight before death.

The microscopic appearances of the lung were eminently those of primary encephaloid carcinoma, but microscopic examination showed neither the alveolar stroma nor the large, variously shaped cells of that genus of tumours. The cells were very uniform in size, delicate, round and oval in outline, with many fatty granules and corpuscles of Gluge: it was a very well marked example of round-celled sarcoma of the encephaloid variety. Dr. Foot expressed his opinion that some of the crumbling débris of a softened portion of the sarcoma had found its way into the pulmonary veins, and thence carried to the brain, had caused capillary embolism in the vessels of the left corpus striatum, but after a most careful examination of the parts he found himself unable to actually demonstrate that this had been the immediate cause of death.

Art. 9.—*Hospital Hygiene.**

By Charles Langstaff, M.D., Surgeon to the Royal South Hants Infirmary.

The following is a summary of what Dr. Langstaff has expressed in his brochure :—

First, That it is impossible to localize individual cases, unless our large hospitals are pulled down and new ones erected.

Secondly, That to improve the hygienic condition of our hospitals it is necessary—

1. To render the walls, floors, ceilings, furniture, &c. non-absorbent.
2. That the wards be cleared out once in every six months, and remain empty at least for a week.
3. To admit air as pure as possible, and keep it so by the use of an antiseptic purifying process.
4. To have the drainage rendered so perfect that no back-current can pass through the traps of the closets, sinks, &c.
5. To employ such a method of dressing wounds as will render the putrefactive process impossible, and prevent the development of septic germs.
6. To have all clothing, alvine evacuations, &c. disinfected as soon as possible.
7. To prevent the contamination of one patient by another, and the conveyance of poison germs by the attendants.

Art. 10.—*An Analysis of Ship Air, and its Effects.*†

By Alexander Rattray, M.D. Edin. ; Surg. R.N., H.M.S. *Britannia.*

Communicated by George Busk, F.R.S.

(*The Lancet*, Jan. 25.)

Much, perhaps nine-tenths, of the sickness prevalent in H.M.'s Navy is preventible. Many diseases result from impure air. Experiment shows that ship air is more vitiated than is generally supposed. No analysis has hitherto been made. Without a correct knowledge of the intensity and nature of the pathological agents we cannot fairly estimate their effects or endeavour to counteract them.

Measurement showed that in H.M.'s frigate *Bristol*, the type of a large class, the crew had little more than from 100 to 120 cubic feet space at night, and 60 at meals ; officers about 400. This contrasts with the 600 cubic feet allowed soldiers in cold and 1500 in warm climates ; hence chiefly why ship air is more impure than that of barracks or private dwellings generally. Although large ironclads give a greater air-space,

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* "Hospital Hygiene." By Charles Langstaff, M.D., Pp. 47. London, J. and A. Churchill, 1872.

† Read at a Meeting of the Royal Medical and Chirurgical Society, Jan. 14th.

they are more shut in, and the internal atmosphere is probably equally impure.

The results of 150 experiments, during a four months' voyage from the Cape of Good Hope to England, show that carbonic acid, chiefly derived from the lungs, is the great impurity. This varies from 4 to 18 vols. per 1000, and even more in the deeper parts. For obvious reasons, it is most abundant where and when the men are crowded—*e.g.*, on the berth-deck, at meal times, and at night. It also varies with the ventilation.

Ammonia from the urine; sulphuretted hydrogen and sulphide of ammoninm from the bilge; volatile organic matter, chiefly from the lungs, skin, and mucous membranes; watery vapour from the skin, lungs, and sodden decks; microscopic floating dust or débris from the ship, stores, and crew, are also estimated; the quantities being more abundant than is consistent with health. Ozone diminishes as the impurity increases, and is absent in the innermost parts.

The mechanical and chemical pathological effects of carbonic acid are immediate and remote. From nightly renewed imperfect blood aëration follow lung congestion and a predisposition to pulmonary and cardiac ailments, easily excited by the sudden chills of nightwork and severe exercise aloft. Hence the frequency of diseases of the respiratory and circulatory systems—*e.g.*, phthisis, bronchitis, catarrh, &c. From its non-elimination, and perhaps reabsorption, spring general blood and tissue poisoning, imperfect nutrition and function of every organ and system, whether nervous, muscular, or granular, a long list of more or less obvious, but perhaps oftener obscure ailments, and ultimately premature old age. These results are aided by the long inhalation of organic matter—sulphide of ammonium, &c., and perhaps the deficiency of ozone.

The practical conclusions show the necessity of giving ships the best ventilating apparatus; of always keeping this efficient and at work; and of not trusting solely to fixed systems, but aiding these, when possible, by others; as the air which all, and especially fighting-men, breathe, cannot be too pure.

Art. 11.—*On Overwork and Premature Mental Decay, and its Treatment.**

By C. H. F. Routh, M.D.

(*British Medical Journal*, Dec. 9, 1872.)

After some well-merited praise to the efforts of Dr. Richardson in the same direction, and some remarks on the nature of the present hard-working and competitive age as compared with former ages, Dr. Routh proceeded to show, upon the authority of Dr. Elam, that there had been a very large increase in the mortality from diseases of the brain in

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* Read at a Meeting of the Royal Medical and Chirurgical Society, November 26th.

England; the increase of the population being 30 per cent., while the mortality from diseases of the brain had increased fourfold. So deaths from paralysis and apoplexy had increased from 10,000 to 22,000 annually; deaths from insanity had also nearly doubled; and he showed that there was a direct relation in this increase with the agitation of the times. Dr. Maudsley and others had endeavoured to show that this numerical increase was due to increase of population, and better search after and segregation of the insane. In the last published report of the Commissioners in Lunacy, the ratio per 1000 of the total number of lunatics, idiots, and persons of unsound mind to the population showed an increase each year from 1869, when it was 1·86, down to 1872, when it reached 2·54. The author then enumerated the symptoms of mental decay, showing that they resembled the gradual change that came over old people, and yet were very similar also to those induced by venereal excesses in both sexes, except that in the latter there were symptoms of spermatorrhœa, which were absent in cases suffering from overwork. In both cases the tendency was to the production of idiocy from softening of the brain and insanity. He said there was reason to believe that the immediate cause of these symptoms was deficiency of phosphorus in the brain, endeavouring to prove this by considering *seriatim* the following points:—1st. It is proved chemically that as a man grows older and mentally weaker, or becomes idiotic, so the brain contains less phosphorus; this was shown by the analysis of Heritier. 2nd. The solidity of the brain in a measure depended upon protagon, a phosphoric compound, and those foods which were richest in phosphorus were found by experience to renovate most speedily weakened brain power, such as shell-fish, and fish generally. 3rd. The assertion made by some, that phosphorus could only be assimilated by previous conversion into phosphoric acid, was combated, the effects of the two being shown to be perfectly different—phosphoric acid producing in large doses fatty degeneration of the heart, liver, and kidneys, whereas phosphorus produced necrosis of the jaw-bone, and excited the nervous and sexual system. The opinion of Dr. von Bibra was also quoted in evidence of this. Phosphorus also reduced or removed congestion of the brain. 4th. Dr. Routh next showed that those diseases produced by weakened nervous matter, or aneuresis, were precisely those which were cured oftentimes by the internal administration of phosphorus—viz., some forms of paralysis, eczema, and other skin affections, cerebral congestions with great debility and insomnia. The authority of several writers was cited on these points—Delpech, Professor Fischer of Berlin, Dr. Eames, Dr. Burgess, and Dr. Hammond of New York. 5th. The special treatment indicated in these cases was next considered. (1.) Complete rest of mind, especially abstention from all occupations resembling that upon which the mind had been overworked. (2.) The encouragement of any new hobby or study, not in itself hurtful, which the patient might select. (3.) Tranquillity to the senses which especially give in these cases incorrect expressions, putting only those objects before them calculated to soothe the mind. (4.) A very nourishing diet, especially of shell-fish. (5.) The internal administration of phosphorus, whether in its allotropic form, or as the "solutio phosphori medicati," prepared according to Dr. Hammond's formula. (N.B. To

be had of Mr. King, Crawford-street). Some cases bearing out the author's views were subjoined, but not read, owing to the lateness of the hour.

Art. 12.—*On a Hæmatozoon Inhabiting Human Blood: its Relation to Chyluria and other Diseases.*

By T. R. Lewis, M.B., Assistant-Surgeon H.M.'s British Forces.

The following is a summary of the observations and the inferences which have been deduced therefrom, contained in a pamphlet on the above important subject:—

1. The blood of persons who have lived in a tropical country is occasionally invaded by living microscopic filariæ, hitherto not identified with any known species, which may continue in the system for months or years without any marked evil consequences being observed; but which may, on the contrary, give rise to serious disease, and ultimately be the cause of death.

2. The phenomena, which may be induced by the blood being thus affected, are probably due to the mechanical interruption offered (by the accidental aggregation, perhaps, of the hæmatozoa) to the flow of the nutritive fluids of the body in various channels, giving rise to the obstruction of the current within them, or to rupture of their extremely delicate walls, and thus causing the contents of the lacteals, lymphatics, or capillaries to escape into the most convenient excreting channel. Such escaped fluid may be the means of carrying some of the filariæ with it out of the circulation. These occurrences are liable to return after long intervals—so long, in fact, as the filariæ continue to dwell in the blood.

3. As a rule, a chylous condition of the urine is only one of the *symptoms* of this state of the circulation, although it appears to be the most characteristic symptom which we are at present aware of.

4. Lastly, it appears probable that some of the hitherto inexplicable phenomena by which certain tropical diseases are characterized, may eventually be traced to the same, or to an allied condition.

Art. 13.—*Progressive Muscular Atrophy, Accompanied by Muscular Rigidity and Contraction of Joints, with Examination of the Brain and Spinal Cord.**

By J. Lockhart Clarke, M.D.

Communicated by Sir William Gull, Bart, M.D.

(*British Medical Journal*, December 7, 1872.)

A man at the age of thirty became affected with frequent vertigo,

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* Read at a Meeting of the Royal Medical and Chirurgical Society, Nov. 12th, 1872.

which lasted for three years. From this period he found that he was obliged to be very slow in all his movements, and that if he attempted to move his limbs quickly they trembled very much. Subsequently he felt weakness in the left leg, so that he would suddenly fall down, without feeling giddy, and the calf of that leg began to waste. Then the muscles of the right leg wasted, and four months later he noticed wasting of the muscles of the left shoulder. He complained of severe dragging pain in the arms and legs. These symptoms gradually increased through a number of years, so that at the age of fifty-eight he was quite unable to stand, or even turn in bed, or feed himself. There was great muscular rigidity. Almost all the muscles of his body were much wasted, especially those of the upper extremities. The respiratory movements were very feeble. There was no trouble with his bladder, nor any noticeable alteration of cutaneous sensibility, but electric sensibility was almost abolished. His speech was indistinct and nasal. Deglutition became difficult, and at last almost impossible, and saliva ran from his mouth. The fibrillar tremors and rigidity of the muscles wholly disappeared during the last week of his life. Parts of the cerebral convolutions were thickly interspersed with corpora amylacea, and many of the blood-cells of the white substance were enlarged. The cells of the grey substance were not altogether healthy. The pons Varolii was somewhat below the average size; its blood-vessels were much dilated. The corpora amylacea were thickly interspersed. The medulla oblongata was about one-fifth below the average size in the adult. All its nuclei were decidedly smaller than usual, and their cells were more or less affected by pigmentary degeneration. The diameter of the spinal cord was at least one-fourth less than the average in the adult. The grey substance, from one end to the other, was severely damaged by a variety of lesions and degenerations. In all regions of the cord the nerve-cells of the anterior grey substance had undergone considerable degeneration. Some of them had wholly disappeared by gradual pigmentary wasting, or by falling into heaps of granules. Of those that remained, the processes were either lost or reduced considerably in size.

Art. 14.—*On the Changes which take place in Muscular Tissue after Section of Nerves.*

By Drs. G. Bizzozero and C. Golgi.

(*Medizinische Jahrbücher*, Heft 1, 1873.)

"It has already been proved by the researches of Montegazza and Vulpian that muscles undergo appreciable changes when they are removed from the influences of nerves. Montegazza has shown that, when the sciatic and crural nerves are divided there will be, in addition to serious changes in the bones, cartilages, &c., diminution of the transverse diameter of muscular fibre, multiplication of the nuclei of the muscle corpuscles, and an increase of the interstitial connective tissue. In one instance, in which the experiment was carried on for

several months, abundant fat, partly in cells and partly as free granules, was observed here and there between the fibres.

"The following changes were observed by Vulpian in the muscles of the lower extremity after section of the sciatic nerve, in the muscles of the tongue after division of the hypoglossal and lingualis, and in the muscles of the face after division of the portio dura: diminution in the thickness of the muscular fibres, partial absence of the muscular substance, proliferation of nuclei, increase of the interstitial connective tissue, and finally, the presence of a larger or smaller amount of oil vesicles.

"Fasce and Erb, who subsequently instituted similar researches, confirmed the above-mentioned results concerning these changes in muscle.

"In some researches instituted with other objects we obtained by chance preparations in which were seen a disappearance of muscular tissue, sometimes partial, at others complete, resulting from section of nerves. This condition was met with in muscles which seemed to be much thickened, in consequence of the substitution of fat for muscular tissue.

"On January 10th, 1870, we cut out from the right sciatic nerve of a rabbit, six months old, a piece about one centimetre in length. The corresponding tibio-tarsal joint gradually thickened, and between four and five weeks after the operation an ulcer appeared on the posterior surface of this region. During this time the lymph glands became enlarged. The animal still remained vigorous, and on August 20th, 1870, we excised a portion of the crural nerve of the same extremity. Until the 9th November the animal remained healthy. In December the above-mentioned ulcer increased much in size and presented an unhealthy and hæmorrhagic appearance; in consequence of this the animal rapidly sank.

"On December 12th, the day of the animal's death, the following appearances were found in its body:—

"The animal was much emaciated throughout; corresponding to the tibio-tarsal joint of the right side was a large and unhealthy-looking ulcer, at the bottom of which could be felt the articular portions of the tibia and astragalus rough and thickened. The connective tissue of the whole extremity was infiltrated with serum; under the ulcerated skin of the limb were collected, here and there, caseous masses enclosed in a thick capsule of connective tissue. The stumps of the divided nerve were separated from each other. The superficial muscles of the thigh were pale red, and the deep muscles, on the other hand, of a yellowish colour. The superficial muscles of the leg were greyish-red and at some parts yellow; they felt rather hard, and could be readily torn. The deep muscles of the leg were thickened, and yellow in colour throughout; the cut surfaces were smooth, and apparently lardaceous.

"Microscopical investigation showed in the superficial muscles of the thigh isolated rows of fat granules, which seemed to correspond to the course of the nerve fibres. In the deep-seated muscles of the thigh the muscular fibres were found attenuated here and there, the transverse striæ were not well-marked, and between the muscular bundles of the first and second order were seen numerous large zones of fat cells. At

other parts the muscular substance of single fibres was partly torn in pieces, and partly replaced by fat cells.

"The superficial muscles of the leg presented very markedly those appearances which are generally represented as the result of section of nerves; that is to say, multiplication of the nuclei of the muscle corpuscles, withering of the fibres, increase of the interstitial connective tissue, and a profuse deposit of fat cells between the muscular fibres.

"In the deep-seated muscles of the lower extremity, which were yellow and lardaceous, no traces of muscular tissue could be found; it seemed to have been converted into fatty tissue, which resembled that of the panniculus adiposus. On transversal section the fat cells presented round or irregular margins, and were arranged as in a mosaic. On longitudinal section they were seen to be arranged in rows corresponding in direction to the fibres and muscles.

"In other investigations of shorter duration we met with fat cells only between the larger bundles. In one case, which had been observed for two months only, the fat cells were scattered between the bundles. In one case, observed for four months, we failed to find any trace of fatty deposit.

"These observations appear to us to be of some importance, as they indicate the causes of certain varieties in diseased conditions, as, for instance, pseudo-hypertrophic paralysis, in the advanced stages of which the muscular fibres are found separated by fatty tissue, whilst in the earlier stages, as has recently been observed, merely hypertrophy of the interstitial connective tissue is evident."

Art. 15.—*Periods of Infection in Epidemic Diseases.**

By William Squire, M.R.C.P.

(*British Medical Journal*, April 26.)

Dividing epidemic diseases into two classes as their period of incubation was long or short, taking small-pox as the type of the one, and scarlet fever of the other, Dr. Squire proceeded to show that in the former class the interval between the reception of the poison and its infectious reproduction consisted of a latent stage, which was in most instances variable, and a stage of invasion nearly constant for each disease. In this latter part certain initial processes of the disease were accomplished, producing infection some time before the ordinary signs of the disease appeared, though not without signs of warning, the most constant one being a rise of temperature. Where a disease could be inoculated the variable latent stage was reduced to a minimum; yet in small-pox eight days were then requisite for the necessary steps of the disease, and, so far as had been ascertained, four days more when taken by infectious inhalation, so that it seemed to be impossible for the illness to appear in less than twelve days from infection. It was not likely that for the first week or ten days after exposure a person had himself

* Read at a Meeting of the Epidemiological Society, February 12th.

become infectious, but facts were adduced to show that infection was set up certainly two days before the eruption of small-pox. The interval might not be attended with danger to those around, but it was most important to know what that interval might be for each special disease, so as to guard against an apparently healthy person setting up that disease elsewhere, so that a reasonable watchfulness should be observed until that time was over. A fortnight might be taken to indicate generally this interval for the first class of diseases, nor would they appear in less than eight days; whereas, for the second class, eight days would generally be a sufficient precautionary interval, and many of them might appear in a much shorter time. The eruption of small-pox appeared nearly a fortnight after infection. This time must also be allowed for measles, though it would generally appear in less. Of forty cases detailed by the author more than half showed the eruption from ten to twelve or fourteen days after exposure; in one it appeared in eight days, and in one after fifteen days from a definite exposure. Four other cases from sources of infection indefinitely prolonged appeared at fifteen, seventeen, and eighteen days; and one at an interval of two months from the original outbreak, infection remaining in the dwelling. Many of the cases of measles showed that it was only in the catarrhal stage, the so-called sickening for measles, that infection was spread. At a day-school a boy was kept in the class-room because he was dull with his lessons. Next day he was not well enough to come to school. The third day he had the rash of measles, and several of the boys in his class had measles within a fortnight. A visitor slept two nights with a little girl, and left with slight signs of a cold, which two days afterwards were found to indicate measles. Ten days after the visitor left the little girl had measles, necessarily communicated two, and possibly three, days before the appearance of the rash. On the outbreak of measles in a family it was too late to expect to prevent its spread to others if they had been with those sickening until the rash appeared. Cases were given where, on bringing children home at the height of the rash, and keeping them separated from other children in the house for three weeks, none of them took measles. Careful observation of the course of vaccination showed an analogy with the early stages of other diseases of the class, and a very close resemblance to what is seen in measles. The sudden febrile disturbance on the eighth or ninth day, with its sudden subsidence in the one case, was exactly parallel to what occurred on the throwing out of the rash in the other, so that in both the more characteristic part of the ailment was more nearly the end than the beginning of it. Though infection might begin in diseases of this class before the more prominent signs of the disease were declared, yet it did not persist so long as in some diseases of the other division. In scarlet fever instances were given where infection was communicated by personal contact sixty-six and seventy days from the commencement of the complaint, or from six to seven weeks after the special illness was over, while in measles it was generally sufficient to allow three weeks after it for infection to clear off; and mumps, as if in compensation for its long incubation period, seemed to be free from infection a fortnight after the disappearance of the last signs of the disease. Hooping-cough, though its affinities were with diseases of the second class, and like scarlet fever,

continued to be infectious for two months, had the dangers of the first class in being infectious long before its most characteristic sign, the whoop, appeared. Its incubation-period was shown to be often nearly a week, but as its earlier symptoms were obscure, at least a fortnight must be allowed in this affection before a child who had been exposed to infection could be said to have escaped taking the complaint, and the danger of conveying it to others. The infection of hooping-cough could be conveyed, but seemed to be more diffusible, and not to cling so persistently to persons and things as that of scarlet fever. A frequent source of infection was in a person who, having had the disease once, and being thought to be safe from a second attack, takes the complaint again in a mild form, and gives it to others who may be susceptible of its worst effects. So it was not always safe in schools and families to admit a child who is said to have had hooping-cough from a house where others were ill with it. Where children had taken the infection of measles and mumps, or of measles and hooping-cough together, the measles appeared first, mumps ten days after, and hooping-cough after two or three weeks. For several days of the measles that disease only was communicated, a sort of clinical analysis of these diseases often being performed for us. An important point noticed in most of the instances given was that those most in contact with the sick, whether in the same class, the same room, or same part of the room, took the infection more readily than those kept more apart; so that in a large well-ventilated school-room it might be possible to limit very much the spread of these diseases. Compulsory attendance at school might be a necessity. Hooping-cough in a family where the children were very young was an evil most important to avoid. Separate beds for children, and well-ventilated bedrooms, lessened the severity of those ailments where they did not prevent them. Typhus continued to be infectious longer after it was over than typhoid. Extreme instances were given of variation of incubation in the latter. As infection was longer after inhalation than after the inoculation of some of the poisons, the question was raised whether it might not be still further delayed after deglutition or imbibition.

Art. 16.—*On the Nature of Erysipelas, and its Relations to Infectious Maladies.*

By M. Raynaud.

(*Gazette Hebdomadaire*, No. 11, 1873.)

The following remarks were made in the course of a discussion on facial erysipelas, in the Medical Society of the Hospitals, Paris:—

It is necessary, in the first place, to determine whether erysipelas be a pathological unity, always identical with itself, or whether under this title a number of different affections has not been confounded. Are there not really several kinds of erysipelas, resembling one another in their external aspect, but differing in the causes to which they owe their origin?

That erysipelas is inflammatory in its nature is undoubted; that this

inflammation is seated in the skin cannot be denied. In what elements of the skin, then, does the inflammation reside? This is one of the points that require elucidation. M. Raynaud does not hesitate to place the inflammation in the superficial lymphatic network. But is there nothing more here than inflammation pure and simple? Some surgeons hold that there is, and physicians feel bound to acknowledge that there is in erysipelas of the face a specific element which brings this disease within the large class of pyrexiæ. It cannot, however, be assimilated to an eruptive fever because it does not follow an invariable cyclical course, and, on the other hand, erysipelas is a malady which very readily relapses, whilst the eruptive fevers, when once they have occurred in an individual, create immunity for the future. Still the appearance of facial erysipelas in an epidemic form, its occasional contagious character, the rapid generalization of the symptoms, the intensity of the febrile movement, the ready occurrence of delirium, the hyperæmic lesions of the majority of the viscera, the existence of disseminated metastatic abscesses, &c.—all these characters point incontestably to a specific element, such as is supposed to be present in the pyrexiæ.

For the presence of facial erysipelas two things are necessary—the inflammatory element and the specific element; if the latter be absent, one has to deal, not with erysipelas, but with a phlegmasia pure and simple of the lymphatic network; in fact, with angeioleucitis.

M. Raynaud is convinced that angeioleucitis occurs as frequently in the face as it can do in other regions of the body, and that this facial angeioleucitis, quite a local malady and consecutive to a wound, an excoriation, or an impetiginous crust, is of very frequent occurrence, and is then often considered as true erysipelas of the face. This explains why erysipelas of the face so often attacks scrofulous individuals, who are specially disposed to inflammations of the lymphatic system. But if in these the erysipelas soon ceases, as has been remarked by M. Vidal, it is because one has had to deal with a pseudo-erysipelas, a simple angeioleucitis, a malady which is local and has nothing of the specificity of true erysipelas. The same may be said of those relapsing attacks of erysipelas with which some young women are affected at menstrual epochs, of those patches of livid redness which circumscribe some groups of small-pox pustules, of the red patches which spread over the sacral region in typhoid fever, and of the inflammations produced around punctures made on the inferior limbs of œdematous subjects. In all these instances one has to deal with angeioleucitis, and not with erysipelas.

True erysipelas has, in an immense majority of cases, an injury for its starting-point; this may be a superficial and more or less microscopic wound. The exceptions to this rule are very few in number, and in those one may be allowed to suspect errors of observation. A wound is given, things pass as if an infecting germ had penetrated through this open door and produced an inflammation of the lymphatic networks, and an irritation prolonged to the corresponding lymphatic glands.

But, some one will say, if from an anatomical point of view the infecting agent produces but angeioleucitis, how can we explain that famous classical margin which constitutes almost a pathognomonic sign of erysipelas? M. Raynaud answers that there is some exaggeration in

attributing so much value to this margin; that if this exists in erysipelas and not in simple angeioleucitis it is because erysipelas advances in patches, occupying groups or departments of lymphatic capillaries collected into network around trunks of a more or less considerable size; at the period when a district is about to be attacked the erysipelatous patch forms a projection, the convexity of which is marked by the margin in question. In ordinary lymphangitis the inflammation extends rapidly, and attacks at once several groups of lymphatics.

Besides, erysipelas is not the only variety of angeiolcucitis in which a well-marked margin is met with. The lesions following a punctured dissecting wound present, two or three days after the accident, solid œdema, circumscribed redness of the integument, and glandular engorgement, signs which might induce one to imagine erysipelas, if the initial cause were not known, which permit precision of the diagnosis. On the other hand, in acute glanders the face acquires an erysipelatous aspect, which in the first days might lead one to conclude that a veritable erysipelas was present. M. Raynaud quotes a case which was under M. Hérard. This was regarded by almost every one as a case of facial erysipelas. M. Hérard alone diagnosed glanders from a discharge from the nose and from the occupation of the patient, who was a groom. All these examples prove that the lymphatics, like the other systems of the economy, have not an indefinite number of modes of reaction. Whenever specifically irritated, whatever be in other respects the agent of irritation, they inflame in an identical manner, and it is only by knowledge of the pathogenic process that one may determine the particular nature of the inflammation.

In regarding the penetration of an infecting germ under the epidermis as the cause of phenomena similar to those of erysipelas, one cannot refuse to admit that this latter affection is due to some cause of the same order. But what is the specific agent that produces erysipelas? This has hitherto been a very obscure question. It should be remarked that erysipelas in an epidemic condition is always developed in the midst of other epidemics, amongst diseases caused by overcrowding, in military practice and also in adjacent civil practice, when purulent infection predominates, and at the time of some puerperal epidemic: in short, erysipelas of the face occurs not as a primary epidemic condition, but as a secondary epidemic condition. Does not umbilical erysipelas of the new-born child always coincide with puerperal fever in the Maternity Institution? The severity of this erysipelas is due to the fact that it recognises as its cause the specific infecting agent which presides over puerperal affections. Epidemics of erysipelas of the face may coincide also with those of purulent ophthalmia, of ulcero-membranous stomatitis, of hospital gangrene, of dysentery, of camp and typhoid fever, and even of colic.

The opinion of M. Raynaud in brief is this, that a specific agent capable of penetrating directly into the blood, or of being absorbed by the respiratory passages, and of producing the above-mentioned infectious maladies, may produce erysipelas when it penetrates into the economy by a traumatism affecting the lymphatic vessels. The morbid agent is the same, but the gate of entry differs. Certainly all this is hypothesis, but with this hypothesis one may explain why the erysipelas is generally

less severe than the corresponding infectious malady. Evidently erysipelas of the face is less dangerous than purulent infection ravaging a surgical ward; spontaneous erysipelas is likewise less formidable than surgical erysipelas, because in this latter affection, the infecting agent, instead of penetrating only by some lymphatic vessel finds numerous lymphatic vessels and also veins open and exposed at the surface of the wound. In spontaneous erysipelas, the infecting agent reaches in its course lymphatic glands which oppose to it an insurmountable or at least a modifying barrier, and so arresting the infection, give time to the organism to react in an efficacious manner.

That erysipelas has a very marked predilection for the face, and that it runs its course in a very benign manner, is because this region is covered by fine skin which is very subject to excoriations, always uncovered and thus more exposed to the direct influences of infectious agents.

With regard to the contagion of erysipelas, such as is shown habitually in hospital practice, and especially in surgical wards, this may be explained by the medium in which the affection is developed; this is not contagion but infection. This is not a denial that there may be veritable contagion in certain forms of erysipelas.

It is necessary then to continue to maintain the unity of erysipelas from the point of view of anatomy and of pathological physiology, but it is conformable to observation to admit multiplicity from the point of view of etiology and, consequently, of its intimate nature.

With regard to the local treatment of erysipelas, M. Raynaud has very little confidence. The barriers of collodion are quite illusory in the arrest of erysipelas, and he has been able quite recently to prove their inefficacy. Blistering is of great value but it is necessary to apply it, according to Dupuytren's method, to the very centre of the erysipetalous patch; artificial irritation thus treated may advantageously modify the primary condition, and so serve as an application of the substitutive method.

ART. 17.—*On the Pathological Anatomy of Acute Yellow Atrophy of the Liver.*

By Prof. ZENKER.

(*Deutsches Archiv für klinische Medicin*, 1, 2, 1872; *Schmidt's Jahrbücher*, No. 10, 1873.)

Nothwithstanding the abundant material which has been accumulated on this subject since the contributions of Rokitansky, no uniformity as yet prevails in the conception of this disease; even the post-mortem appearances are differently described. Zenker has directed his attention to this part of the subject, and has attempted in this contribution to establish the most important anatomical conditions and to obtain a firm basis for further discussion; his main object being to restore to their position earlier views, in opposition to the erroneous conceptions of many recent authors.

The author has investigated twelve cases of acute yellow atrophy of the liver. Two post-mortem appearances above all others may be found

in the liver; two different conditions of the hepatic parenchyma may be observed, either through the capsule of the atrophied organ or on its cut surface; in one the parenchyma is of gum-yellow colour and soft, does not present any lobular markings, and projects on section of the organ; in the other condition the parenchyna is of a dark red colour and smooth, firm and tough on section. Zenker describes these as the *yellow* and the *red substance*. In Rokitansky's first delineation the latter substance is wanting, and undoubtedly cases occur in which the whole liver presents the character of the yellow substance, a condition which, if Zenker's views be accepted, may be understood without difficulty. According to the author, the course of the changes in the liver is as follows: there exist in the first place intense hepatic icterus and at the same time, in the great majority of cases, excessive fatty infiltration of the hepatic cells; these break down and the detritus thus formed is rapidly absorbed so that no trace of the cellular hepatic parenchyma remains. Accordingly the different coloured substances represent different stages of the same process, the red representing the highest degree of the atrophy, and thus likely to be wanting in cases where death occurs before this stage has been reached. This red substance, though observed by Oppolzer, Klebs, Fleischl, and other observers, and probably by Bright, is not alluded to in widely-spread handbooks on pathological anatomy and clinical medicine. Klebs, who gives a close description of this red change and indicates it as red atrophy, does not regard it as a subsequent stage of yellow atrophy, but is inclined to consider it as a special morbid form. Against contrary opinion and in support of his own views, Zenker brings forward the following facts:—

1. The frequent presence of the red substance in livers, which after death, with well marked clinical appearances of severe icterus, present in parts which are not occupied by this red substance the characteristic anatomical appearances of the yellow atrophy, and to such an extent that the amount of yellow substance exceeds that of the red. This condition, according to Zenker, would have escaped the observation of those only who by chance have met with none save very extreme cases.

2. A condition of the liver presenting a similar red substance, and with an acute origin, has never been found in any case in which on the one hand death did not occur after symptoms of severe icterus, and on the other the liver did not contain small portions at least of the yellow soft substance.

3. The interdependence of the yellow and the red substance is evidenced by the disposition of these substances side by side, in cases where both are present in considerable quantities, and also by the microscopical relations; at first small red deposits are formed in the midst of the yellow substance, which deposits gradually run together, and finally supplant the yellow substance (the whole of the left lobe of the liver is frequently converted into red substance).

The author's views are most readily supported by the results of microscopical investigations. With regard to the origin of the yellow substance, the breaking down of the liver-cells is unanimously conceded as the main point. The detritus resulting from this destruction of cells forms large accumulations and causes the removal of all other

structural elements. To this detritus Zenker, in opposition to other authors, attributes the extreme fatty character of the liver contents observed in the majority of cases; where the cells are still maintained, drops of oil may be seen lying within the changed protoplasm. Instances in which the amount of contained fat is small are rare. In a post-mortem examination of a pregnant woman who died fourteen days after the first appearance of icterus, Dr. Zenker found that some of the liver-cells had been preserved, and that each of these was distended with a pale finely-granular mass and contained but very few oil-drops (in this case the red substance was wanting). In the yellow substance, so long as the liver-cells are preserved, these structures, otherwise than the stroma bearing the fatty detritus, have an intense icteroid hue. Finally, yellow flakes appear in the parenchyma and yellowish-red rhombic crystals with the reaction of hæmateridin, these also Zenker refers to the icterus. The microscopic investigation of the red substance shows in all cases a total loss of liver-cells; one generally sees a pale homogeneous or streaky basis substance almost quite free from nuclei, and studded over with very fine fat molecules (never so thickly that the basis substance is concealed); of icteroid coloration there is no trace. In other instances, the basis is studded with numerous nuclei; finally, in some few cases peculiar cellular processes resembling follicular glands are found; these have been described by Waldeyer and Klebs, and they correspond to the interlobular gall passages pointed out by Hering, which are no longer provided with proper epithelium. These cellular masses are never observed in the yellow substance. Zenker is inclined to think with Waldeyer that these follicles are indications of a commencing regenerative process.

If the whole course of yellow atrophy be considered, one should not feel justified in indicating by the name of parenchymatous hepatitis that this process is an inflammatory one. Post-mortem appearances tend to show that it is a local affection and not a general disease of which the hepatic atrophy is a local manifestation. According to Zenker's opinion it commences as a simple catarrhal jaundice; then in the jaundiced hepatic parenchyma there occur, under the influence of some unknown cause (disturbances of innervation), breaking down of the liver-cells and absorption of detritus. With this destruction of tissue coincide the symptoms which indicate yellow atrophy, which affection therefore is to be regarded as a pernicious epistrophe dependent on some unknown cause, of what was originally a simple catarrhal icterus.

Art. 18.—*On Tapping in Cirrhosis.*

By S. O. Habershon, M.D., F.R.C.P.

(*On the Pathology and Treatment of some Diseases of the Liver*, pp. 91, London, 1872.)

Dr. Habershon believes that the operation of tapping for the removal of the ascitic fluid in cirrhosis, if performed at an early stage of the disease, promotes recovery and saves much time, sparing the patient a long continuance of medical treatment.

It is quite true, he remarks, that at an early stage we are anxious to

employ other measures less alarming to the patient; but in several instances in which it has been performed early, patients have soon recovered without the re-collection of the fluid, whereas in the later stages paracentesis is always attended with danger, for the peritoneal vessels are intensely congested, and peritonitis is easily induced. Many patients with chronic cirrhosis die a few days after tapping. Peritonitis does not in these cases produce pain, but rather typhoid exhaustion. The continued use of saline aperient waters is often attended with the greatest benefit in this form of chronic disease of the liver.

Dr. Habershon gives the case of a woman who had been suffering from the disease for altogether about eight weeks, and who subsequently, after the removal of seventeen pints of fluid, made a rapid recovery.

Art. 19.—*The Treatment of Gall-Stone.*

By S. O. Habershon, M.D., F.R.C.P., Physician to and Lecturer at Guy's Hospital.

(*On the Pathology and Treatment of some Diseases of the Liver*, pp. 91, London, 1872.)

The treatment of gall-stone Dr. Habershon divides into that which is calculated to relieve the paroxysm; that which lessens the jaundice; and thirdly, that which is designed to prevent the recurrence of the attack. As to the first, the intensity of the pain calls for immediate attention, and, by means of the hypodermic injection of morphia and the inhalation of chloroform, we are enabled to afford considerable relief; these means are much more effective and better than the internal use of opium, which is with difficulty absorbed, and has sometimes been given in such large doses as to endanger the life of the patient. Externally hot fomentations may be applied, or, what is more effectual, the mixed chloroform liniment, belladonna liniment, and aconite liniment—half an ounce of the two first, and a drachm of the latter. If the bowels are confined, they should be acted upon by a free mercurial purgative and warm saline draught, or by an enema.

In hastening the removal of the jaundice, an unstimulating diet and gentle action on the bowels are the best means to employ; and the saline mineral waters are often of great assistance, but must be administered with caution. Alkalies may be used with advantage, not only in facilitating the discharge of inspissated bile, but in lessening duodenal irritation. It is of great importance also where other calculi are retained, and also where much irritation has been left after the passage of a calculus, that there should be no fresh source of irritation to the pyloric region of the stomach and the first portion of the duodenum. Bismuth with alkalies is of some value in diminishing this gastric sensibility; but, whilst anæsthetics and anodynes afford immediate relief, and alkalies promote recovery, a great amount of patience is required by the medical attendant, as well as by the patient, lest the disease be aggravated by over-active treatment.

Art. 20.—*The Etiology of Enteric Fever.*

By Henry Kennedy, M.D.

(*Medical Press and Circular.*)

At a meeting of the Medical Society of Dublin on February 12th, Dr. Henry Kennedy read a paper on the "Etiology of Enteric Fever," in which his object was to show that the cause of this specific type of fever lay more in the constitution of the individual than in the outward causes—more particularly dirt (taking this word in its widest signification), to which so much weight has been attached. He supported his views by reference to a number of well-known facts; and more especially to what occurs in typhus fever, which he observed was much more fatal amongst the middle and upper classes than amongst the lower. Yet no one ever thought of these being different fevers. Something analogous, too, he stated, might be observed in the different mortality of typhus in London and Dublin; for it was known and admitted that in the former this fever was much more fatal than amongst ourselves. The various epidemics, too, of fever presented very marked differences, as all present were probably aware. Thus, that of 1817-18 presented a marked contrast with the one of 1847-48, which some amongst us recollected well. In none of the instances could the differences be attributed to varied poisons; and the author thought there were very good grounds indeed for supposing that they were mainly due to the general state of health of the people at the time being. In the same way he looked upon enteric fever as an affection which derived its peculiar symptoms mainly from the constitution of the patients. For very many years he observed that persons attacked with this type of fever were apt to have a fine skin, and a high complexion. They were often, too, gleer-eyed, and, if children, had spots on their head. Many cases, too, had come under his notice where there were scars on the neck, and in point of fact, they were persons who, under any circumstances would be looked on as delicate. This delicacy seemed to the author due to the strumous diathesis, and this view of the subject went far in explaining most, if not all, the peculiarities of enteric fever. The author then went on to draw attention to the hæmorrhages, and duration of the disease, and dwelt at some length on the peculiar character of the lung complication, which so often showed itself in the progress of the fever. This complication not only often resembled tuberculous phthisis, but it ran, in a certain percentage of cases, into that disease. A gentleman in England, whose name he forgot, had recently detailed some cases of this kind. Besides, too, the author had himself met cases where phthisis supervened directly on the decline of the fever. But it was worthy of remark that no such occurrence had ever come under his notice in connexion with typhus fever. The author then detailed a case in which the sequence of events was, firstly the establishment of phthisis in a very unequivocal form; then a lull in the symptoms for a year; then an attack of enteric fever, marked by three crops of the spots of this disease, and finally the recurrence of the symptoms of phthisis, running its course with great rapidity. He also alluded to another

case, which he saw with Surgeon Rogers, where, two years before an attack of enteric fever, the patient had been threatened with phthisis, attended by pulmonary hæmorrhage. The author then drew attention to the great similarity of the morbid state found in the ileum and mesentric glands of a patient dying of enteric fever, and of one dying of phthisis. For his part he could not distinguish them. In conclusion, the author said if the view he had advanced should prove to be correct, it would have a very important bearing on the prognosis and treatment of enteric fever.

Art. 21.—*Clinical Remarks on Typhoid Fever.*

By Samuel Wilks, M.D., F.R.C.P., Senior Physician to Guy's Hospital.

It is something very difficult to diagnose typhoid fever; for, on the one hand, it may present chiefly head, lung, or intestinal symptoms, while on the other hand, ordinary affections of these organs are often accompanied with pyrexia. It will often be found exceedingly useful in diagnosis to follow the history of the case. In fact a diagnosis may sometimes be made by reading the notes of a case when a personal examination of the patient gives only negative results. This will be found to be the case more particularly in typhoid and typhus fevers. These two diseases may closely resemble each other in their clinical aspects, but by paying attention to their history, their mode of onset, and their course, a diagnosis may often be positively made where doubt previously existed.

Art. 22.—*On the Lesions of Chronic Dysentery.**

By M. Cornil.

(*Gazette Hebdomadaire*, No. 11, 1873.)

M. Cornil found in the large intestine, besides pigmentation and swelling of the mucous membrane, more or less extensive depressions corresponding to ulcers, and more profound loss of substance. The depressions are caused by a removal of epithelium and by a more or less complete destruction of the tubular glands. The ulcers correspond to a destruction of almost the whole thickness of the mucous membrane, and sometimes involve the layer of smooth muscular fibres situated under the mucous membrane; there is also an infiltration of leucocytes or white globules into the tissue of the mucous membrane, presenting the appearance of this membrane in its embryonic condition. Finally, the culs-de-sac of the tubular glands are dilated and the walls hypertrophied.

The loss of substance is presented as ovoid masses, the margins of which are flush with the internal surface of the intestine, and which

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* Communicated to the Société de Biologie, Paris.

form oblong, rounded, and dilated cavities situated below the smooth muscular fibres of the mucous membrane. These cavities or losses of substance have not hitherto been sufficiently described or studied. According to M. Cornil, they are formed by closed vesicles or submucous lymphatic glands.

In the first stage the closed vesicle is found swollen; there is, over a part of its contents, destruction of the reticulum, and later on its interior is found to consist of a large vesicle, the contents of which are formed of white globules, epithelial cells of various forms, enclosing vacuoles with gelatiniform contents, and finally a band of membrane folded in different directions on which one may observe a lining of cylindrical epithelium. This lining appears on the side of the ulceration of the mucous membrane, and its appearance coincides with the formation of the ulcer which constitutes the contracted orifice of the vacuole or loss of substance. Thus the loss of substance is produced at the expense of the closed vesicles or lymphatic glands, and the ulcerous wall of the vacuole thus constituted is lined in part by a cylindrical epithelium.

There is, one may say, a new formation of cylindrical epithelium within the mucous membrane, under the influence, on the one hand, of the condition of the infiltration and its softening, and of, on the other hand, the neighbourhood of the hypertrophied culs-de-sac of the tubular glands. In addition there is in these cases an abundant pigmentation at the peripheries of the hepatic lobules and also pigmentation of the spleen.

Art. 23.—*On the Blister Treatment of Rheumatism.*

By Thomas B. Peacock, M.D., F.R.C.P., Senior Physician to St. Thomas's Hospital.

(*British Medical Journal*, January 18.)

As the result of the analysis of the cases of rheumatism that have come under Dr. Peacock's care in St. Thomas's hospital, he finds:—

1. That rheumatic fever is of very variable duration and intensity, and there is no certain means of ascertaining at the commencement of an attack what will be its character. The patient may at first present active symptoms, which may soon subside; or the disease may at the commencement assume a mild form, and subsequently become severe; or an attack, though never of any great intensity, may be very much prolonged.

2. The proportion of cardiac and other internal complications which obtains in any given set of cases, and which at first sight would appear to be a very fair test of the success of the different kinds of treatment adopted, is very variable, without reference to the circumstances in which the patient is placed while under care. Indeed, in a large proportion of cases, the evidences of complication are present to a greater or less degree before any treatment whatever is employed.

It is evident, Dr. Peacock says, that, for any investigation into the usefulness of different forms of treatment of rheumatic fever to lead to satisfactory results, the fallacies which would depend on three causes must be guarded against.

1. It would be necessary that the patient should be kept in bed for a day or two after his admission, before the remedy to be tested should be tried, in order that any aggravation of his symptoms which might be due to his removal to the hospital should have subsided, and that the alleviative influence of rest, warmth, and suitable food should have partly exhausted itself.

2. The cases must then be distributed into two or more classes, according to their probable severity as far as can be ascertained, and those which present any evidences of cardiac complication must also be separated from the general mass.

3. The different classes must be treated separately in a given way, the treatment adopted being precisely similar in all the cases of the same class.

Dr. Peacock has endeavoured to comply with these conditions in 233 cases, and has systematically adopted the blister plan. At first he tried it only tentatively, one, two, or three blisters being applied at the same time or in succession, and in conjunction with other remedial means, and the general impression which he formed was not very favourable. Subsequently he was induced to apply the blisters much more freely, three or four, or even six, at a time, and in rapid succession a still larger number, and he has been led to form a high opinion of their usefulness when thus used, and to confirm what has been said in favour of the treatment by Dr. Davies. The blisters are generally two or three inches wide, and sufficiently long to encircle the limb. They are placed above the chief joints that are affected, and are usually put on in the afterpart of the day; in the morning, or when they have risen sufficiently, the serum is let out, and the surfaces are covered with warm linseed-meal poultices, and these are continued for several days. Sometimes there is a temporary increase of suffering when the blisters begin to draw, and the temperature rises and the patients are restless at night; but generally there is very marked amendment in the morning, both the swelling, tenderness, and pain being reduced, and the constitutional disturbance relieved. Generally with the local means, constitutional remedies, especially the bicarbonate and nitrate or tartrate of potash, are given more or less freely according to the severity of the symptoms.

Art. 24.—*On Rheumatism; the Principles of its Treatment.*

By J. James Ridge, B.A., B.Sc., B.S., M.D., Lond.

(*Medical Times and Gazette*, Nov. 4, 1872.)

After observing that an incipient attack of rheumatism can be cut short by diluents, hot or cold, with abundant warmth and covering to the surface, or hot stimulants, or a Turkish bath, Dr. Ridge proceeds to consider the means by which acute rheumatism can be removed. The inflammatory action, he thinks, may be either checked or diverted. Nerve-excited inflammation may be checked in two ways—(1) either by reducing the nerve energy, or (2) by locally diminishing the activity of tissue oxidation.

By "reducing the nerve-energy," he means a process quite distinct from its diminution in one form through diversion into another channel. He refers to a simple decline of its intensity. The application of continuous heat, whether as simple warmth, or to such an extent as to be an irritant, acts partly in this way, having an action on the nervous system exactly opposite to that of cold. Some sedative drugs probably include in their action a directly antagonistic influence of this kind. Among such are opium, camphor, aconite, and most likely colchicum, although these can act powerfully in other ways. Nitrate of potash has a somewhat similar action on the nervous system, since it relaxes bloodvessels (so promoting the catamenia), and increases the perspiration, and depresses the pulse; it is quite a mistake to regard it as an alkali.

Another mode of checking the process is by directly retarding the oxidation of the tissues. Some of the remedies which have long been used in rheumatism partly produce their beneficial effect thus, although they have not been given with this idea at all. Dr. Ridge refers to the various vegetable salines which have been employed with the intention of rendering the blood and the secretions alkaline, and so of neutralizing the peccant poison. It is well known that in passing through the system these salts are decomposed, and form carbonates of their base: in this process a large amount of oxygen is consumed. The same amount of oxygen is consumed by the complete oxidation of—

2 grains of ammon. acet.
5 „ potass. acet.
7 „ potass. citr.
8 „ potass. tart. acid.
9 „ potass. tart.

When completely oxidized, however, most of these salts form alkaline carbonates, and alkalies promote oxidation; hence, he thinks, that their secondary action will neutralize, or even reverse, their primary effect, and to the extent that they accomplish this they cannot but do harm. More powerful retarders of oxidation are met with in the acids, both vegetable and mineral, as the citric and sulphuric acids, and the hydrochloric in the form of the tincture of perchloride of iron.

But the morbid process may also be arrested by diverting the excess of energy into another channel. This is the old theory of derivation, but with a more extended application and a more precise explanation. Under this head Dr. Ridge includes all those diaphoretic, diuretic, counter-irritant, and derivative measures, which form so large a proportion of our aggressive weapons. These agents either produce a change of action in the inflamed part itself, and substitute vaso-motor contraction or secretion, or they restore the normal trophic action by diverting the excess of energy to establish inflammation, organic muscular contraction, or secretion in some other part "alternatively" connected with it by its sympathetic nerve-supply. The establishment or increase of some secretion is the method most often adopted, and to this end opium, camphor, ipecacuanha, tartar emetic, colchicum, guaiacum, alkalies, salines, and some purgatives are administered, besides the application, either locally or generally, of warmth and

moisture. Secondly, we may promote vaso-motor action by means of quinine, digitalis, and ergot: the first of these remedies is largely used abroad in this complaint. Thirdly, the use of counter-irritants is widely spread, and their value unquestionable. In addition to their irritant action, they tend to reverse the primary action of the cold by their warmth and moisture, and they should be carefully followed up with constant warmth, in order to preserve the unsettled nerve-territories from fresh disturbance. The use of stimulating embrocations frequently relieves the pain, and is often associated with some swelling of the part to which they are applied: and it is not without significance that, when œdema occurs spontaneously, the pain is often greatly alleviated. The (so-called) counter-irritation of the bowels is usually rather a process of counter-secretion, imitating the natural alternation by which nasal catarrh or bronchitis often subsides.

In chronic rheumatism, the direction of more than its proper share of nerve-force into one channel, and the expenditure of extra stimuli in the same way, have become confirmed by the influence of habit. It is consequently more difficult to divert it, or restore equilibrium, and it is more likely to revert to its old course. It is only by the long-continued influence and persevering application of the less energetic alternative remedies that we can hope to effect a permanent change in the distribution of energy. And while we promote secretion we must carefully avoid the reduction of the general power, but rather adopt also such measures as will give tone to the system, lest we render it generally more susceptible to morbific influences.

The means useful for the purpose of diminishing susceptibility are such as promote the general health, and preserve the due balance of all secretions. There are also those which diminish the morbific power of some particular exposure. Among these latter warm clothing is universally approved of. Anointment with oil is also a very useful measure, apparently diminishing the rapidity with which heat can be abstracted. Dr. Ridge specially notices three plans which seem to confirm the views he has been advocating. The liability to take cold in any form is diminished by exercise during the exposure, or by a previous full dose of quinine or of opium. He attributes this to the fact that in exercise nerve-energy is being more particularly directed in certain channels—not that of inflammatory action, but rather of muscular contraction and secretion. Stimuli, therefore, besides having probably less influence upon the trophic system, are diverted—carried with the stream as it were—or, at least, unable to arrest it, and are thereby exhausted and rendered harmless. In the case of quinine we have the vaso-motor nerves thus preoccupied, and perhaps also a positive reduction of trophic energy. In the case of opium, besides diminishing metamorphosis, the secretory system is stimulated to activity.

ART. 25.—*Report of a Case of Acute Rheumatic Fever; Pericarditis; Expected Necessity for Tapping the Pericardium; Recovery.**

By JOHN W. OGLE, M.D.

(*The Lancet*, May 3.)

The patient, aged thirty-four, had had rheumatic fever fourteen days, but had been worse five days before admission into St. George's Hospital. On admission, there was a soft systolic bruit at the base of the heart, whose action was increased. The pulse was 110, and the temperature 103° F. He was treated with salines, and on the next day the respiration was 46 per minute. Leeches were subsequently applied to the cardiac region, but a decided pericardial to-and-fro friction-sound was established. Four days after admission the respiration was very hurried; the cardiac dulness was greatly increased, uninfluenced by change of position; friction-sounds were absent, and the natural heart-sounds very indistinct. Ten days after admission increased distress, cough, or orthopnœa, and physical signs showed that greater effusion in the pericardium had occurred, but the joints had become much less affected. The temperature on this day was only 98°. More leeches were applied and opium given, and subsequently digitalis and squill given in addition to other remedies. No good followed, but effusion with bulging of præcordia became greater, and the respiration rose to 60 per minute. At this time the operation of tapping the pericardium was contemplated, and the area of cardiac dulness reached a measurement of six inches by seven inches. Blistering the pericardial region brought relief, and by degrees the effusion gave way; and eventually the patient, though suffering slight relapse both of the pericardial trouble and the joint affection, quite recovered. The description of the case was accompanied by careful registration of the morning and evening daily temperature, and state of pulse and respiration. Dr. Ogle remarked that as the rheumatic pain subsided, the temperature of the body diminished in spite of the setting in of the graver pericardial symptoms. This absence of increased temperature in pericarditis had been noticed by Wunderlich, and also by Dr. Russell of Birmingham. Dr. Ogle had found in other cases of pericarditis and inflammation of serous membranes how little the temperature was apt to rise. He also alluded to the good which, in the above case, followed the blistering; and after showing that diagnosis clearly excluded all other causes of the general and physical signs except effusion in the pericardium, he dwelt on the necessity which a continuance or increase of symptoms would have occasioned for letting out the fluid artificially, advocating the new mode of withdrawing fluid by means of the aspirator and fine needle trocar. Dr. Ogle sought the opinion of the Society on this matter, quoting cases in which it had been used. After referring to the history of the operation as given by Trousseau, Allbutt, &c., he alluded in detail to the only seven cases in which paracentesis of the pericardium had been performed

* Read at a Meeting of the Clinical Society of London, March 28th.

in Great Britain, quoting the discussion which had taken place on the subject at the Edinburgh Medico-Chirurgical Society apropos of a case brought forward by Dr. Maclaren last year. At the previous meeting of the Clinical Society, when this communication was expected to be read, Dr. Ogle exhibited two varieties of pneumatic aspirators or suction apparatus, which he thought would succeed better than the ordinary trocar which had been used for paracentesis of the pericardium. Of these, one was a modification of Dieulafoy's, made by Weiss: the other, which Dr. Ogle preferred, as being more simple, manageable, and portable, was made by Hawksley, and consisted of a small brass syringe, which could by a cock be adapted to a bottle of any capacity, and an elastic tube to be also attached to the bottle, furnished with a capillary or other trocar. When used, the air was drawn out of the bottle, and the trocar having been introduced into the cavity containing the fluid to be drawn off, the fluid was sucked out into the bottle to replace the vacuum. Dr. Ogle dwelt on the urgency of large pericardial effusions, pointing out that any medical man might at any moment be called upon to provide a remedy; and cited cases of death in which, on post-mortem examination, nothing was found but a distended pericardium which, to all appearance, might easily have been relieved during life by an operation which had never been thought of, and one which Dr. Ogle, *pace* the surgeons present, considered worthy of more confidence than it had received.

Art. 26.—*On the Relation of Gout to Uric Acid.*

By U. M. Ord, M.B., M.R.C.P.

(*St. Thomas's Hospital Reports*, vol. iii. 1872.)

The remarks contained in this paper Dr. Ord sums up as follows:—

1. Gout is a mode of decay of the whole system, marked by the deposit of urate of soda in and about the joints, and by local inflammation of a particular kind.

2. The deposit of the urate is a result of local or general disintegration, and is not to be regarded as a means of eliminating urate from the blood.

3. The local inflammations do not necessarily depend upon the deposit of urate, and the deposit is not a consequence of inflammation; at the same time it is probable that excess of urate in the blood produces irritation of tissues.

4. The local inflammation is peculiar in respect of the ease with which it is produced, of the pain by which it is attended, and of the products, which are chemical rather than structural.

Art. 27.—*Treatment of Scarlet Fever.*

By T. W. Egbert, M.D.

(*Transactions of the Pennsylvanian State Medical Society and Medical Press Circular*, December 4, 1872.)

Dr. Egbert discards the idea of varieties, believing scarlet fever to be one and the same disease, in all places and under all circumstances,

modified by atmospheric, hygienic, and other known and unknown influences. His treatment, from the beginning to the end of a recent epidemic, was uniform, simple, and he thinks novel to many practitioners; but he wishes the successful results to speak for themselves. He treated two hundred and seventy cases, with but a *single* death; and in that case his directions were reversed by the nurse, who applied hot instead of cold applications to the throat. From the incipiency of the disease until the desquamation is perfect, he prescribes the following mixture:—℞ Acid. muriatic., fʒj. Syr. simplicis, fʒij. Potass. chloratis, ʒiij. Aquæ rosæ, fʒiv. Mix. Sig. Half tablespoonful every two hours. The dose designated in the above prescription would be for a child six years of age, double the amount being necessary for an adult, and smaller quantities for a younger child. Where there is much restlessness and nervous irritability he administers paregoric in sufficient quantities to soothe the patient and allay those symptoms. He never found it necessary to use gargles, probangs, or the pencil to the fauces or throat. In one case—that of a male adult, aged twenty-four, married; confined to his bed, with the characteristic scarlet blush making its appearance on the face and neck; general symptoms all present in an aggregate form—he prescribed; ℞. Acid. muriatic., fʒij. Syr. simplicis, fʒiij. Potas. chloratis, ʒiv. Tr. opii camph. fʒj. Aquæ rosæ, fʒiv. Mix. Sig. Tablespoonful every two, three, or four hours. As to this case, he says:—"This was the principal treatment until the twelfth day, when the febrile symptoms had all subsided and desquamation well advanced; with the exception of simple tonics, continued for ten days or two weeks longer, this was the entire treatment of this case, and in sixteen days from the first appearance of the blush, he was at the office, attending to his ordinary business, being an oil broker. The reader can judge of the severity of this case and the efficacy of the treatment, when I state that there were no bad sequelæ, except perfect *onychoptosis* of both hands and feet. In a few cases where there was much congestion about the fauces and throat, ulceration of uvula and fauces, and enlargement and induration of the parotid and submaxillary glands, I found it necessary to use the ice-bag, applied snugly to throat and neck until relief was obtained, which was generally in from six to twenty-four hours, being careful not to freeze parts by continuous application too long at a time."

Art. 28.—*Carbonate of Ammonia in Scarlet Fever.*

By G. J. S. Camden, M.R.C.S.

(*Medical Times and Gazette,* February 1.)

Never give emetics or aperients, nor bleed, nor use leeches, nor do anything to lower the power of life, but give ammon. carb. on the very onslaught of the disease, the earlier the better, when it will cut the disease short. Mr. Camden uses it as follows:—℞ Ammon. carb. gr. x. vel gr. xij., aquæ ʒiv., ʒvj., vel ʒviij.—for 16 years and above. ℞ Ammon. carb. gr. viij. vel gr. x., aquæ ʒiv., ʒvj., vel ʒviij.—12 years to 16 years. ℞ Ammon. carb. gr. vj. vel gr. viij., aquæ ʒiv., ʒvj., vel ʒviij.—6 years to 12 years. ℞ Ammon. carb. gr. iv. vel gr. ʒvj., aquæ ʒij. vel ʒiij.—

4 years to 6 years. ℞ Ammon. carb. gr. ij vel iv, aquæ ʒj vel ij—2 years to 4 years. Unless distilled water be used it must be cold boiled rain-water filtered, the dose to be taken every two, four, or six hours, according to the severity of the throat symptoms; the quantity of water to be regulated on the same principle. The worse the throat the stronger the dose of ammonia, the smaller quantity of water, and to be given most frequently. The choking from the ammonia is instantly relieved by a small quantity of cold water, but if done without the better. If the power of life is at a low ebb, wine or a teaspoonful of brandy, and the same of water between each dose, and beware of aperients. Mr. Camden has waited five or six days. The foregoing prescriptions he sent to a lady in Ireland, who had seen the effect in eleven cases in her own house. In the original treatment in cases in which the tonsils had become gangrenous, the following was used as a gargle:—℞ Rad. pyrethri ʒiij, aquæ ʒxvj, decoque ad ʒx et cola; adde syrup. rheados ʒij.—M. Gargar. sæpe utend. Of the sequelæ, should anasarca supervene, it will readily yield (with alternate doses of quinine as a tonic), to liberal doses of potass. bicarb. (Howard's) with potass. nitrat. taken in a large quantity of water.

Art. 29.—*Treatment of Scarlatinal Dropsy.*

By W. B. Cheadle, M.D., F.R.C.P., Senior Assistant Physician to St. Mary's Hospital.

(*British Medical Journal*, Nov. 23.)

Dr. Cheadle believes that the action of digitalis in scarlatinal dropsy in children is almost invariably beneficial, given in combination with perchloride of iron. It is followed by steady increase in the quantity of urine, with a corresponding subsidence of effusion. Children bear it remarkably well; it may be given from a drachm to a drachm and a half of the infusion to a child of from two to three years old for a considerable time with perfect safety. Dr. Cheadle has frequently given much larger doses without the supervention of any serious symptoms. He mentions the infusion specially because in his experience it is a far more reliable preparation than the tincture—at any rate, as far as the diuretic action of the drug is concerned.

Art. 30.—*Remarks on Asiatic Cholera.*

By C. Macnamara, M.D.

(*Indian Medical Gazette*, Sept. 2, and Oct. 1, 1872.)

Dr. Macnamara, in an interesting paper, gives a table, prepared by his assistant, of cases of cholera under his care, which illustrates, among other things, the fact that the left side of the heart, immediately after death from cholera, is as full of blood as the right. It also illustrates, clinically, the relation between the loss of weight of a patient suffering from cholera and the amount of vomiting and purging, and seems to

indicate that it is not those patients who continue to vomit and purge frequently in cholera that recover, but, on the other hand, that those who rapidly lose weight, or, in other words, who are constantly being purged, most often succumb to the disease. This table shows that the more rapid the loss of weight, the more sure the death of the patient, and that in some cases a patient, suffering from cholera, may lose as much as thirty pounds in weight in the course of a few hours.

On post-mortem examination of a case of cholera, Dr. Macnamara states: "We found the greater part of the mucous membrane lining the small intestines, covered with a glutinous, semi-opaque mucus-like matter; patches of this glutinous lining of the intestines had disappeared, leaving the deeply scarlet villous surface of the membrane exposed. On placing some of this mucus-like matter under a one-eighth of an inch object-glass, I found that it consisted principally of cylindrical epithelial cells embedded in a glutinous material. These cylindrical epithelial cells, examined immediately after death, afforded us a favourable opportunity for demonstrating the formation of the 'cholera cell' of Drs. Parkes and Lewis from the cylindrical epithelium. . . . . I need hardly remind the reader that Drs. Lewis and Cunningham assert that cylindrical epithelial cells are seldom to be discovered in the stools of cholera patients: and upon these observations a writer in the *Lancet* recently declared that we must abandon our ideas regarding the denuded condition of the mucous membrane in cholera being due to anything more than post-mortem changes; for, if the epithelial cells were shed during life in quantities similar to that found after death in the intestines, they must have been passed in the stool, which is not the case. I can only answer this argument by a counter-statement, to the effect that vast quantities of cylindrical epithelial cells are to be found in the stool first passed by patients suffering from cholera, but that, as the disease advances, the hyaline or cholera cells above described, and which are a production of the cylindrical epithelium in a very great measure, take the place of the cylindrical cells. It is very difficult to demonstrate this fact in cases of cholera, for, if the patient has remained in collapse for some time, the active changes in the epithelial cells cease, and beyond this we must operate on very fresh specimens, if we would satisfactorily demonstrate the changes I am about to describe in the cylindrical cells lining the small intestines. We should, therefore, if practicable, induce a condition of the mucous membrane in the lower animals, similar to that which occurs in man when suffering from cholera; and, so far as our present purpose is concerned, arsenic in poisonous doses excites changes in the intestinal epithelial cells, similar to those observed in the human subject after death from cholera. The accuracy of my statements may consequently be verified by any one accustomed to work of this description."

Dr. Macnamara's assistant has carefully noted the changes in the intestinal epithelium of a dog, poisoned by arsenic, and confirms the above statement.

In the case under consideration Dr. Macnamara says, the epithelia found in the glutinous lining of the mucous membrane showed in numerous places evidences of change similar to that observed in the dog poisoned by arsenic, but Dr. Macnamara could discover "only a few

hyaline cells in this mucus-like material. On the other hand, in the fluid contents of the small intestines, multitudes of hyaline cells, with epithelia in an active stage of metamorphosis, were discovered, the truth being that the rapid formation of the *cholera cells* goes on towards the free surface of the lining of the intestines, and particularly in certain spots from which the epithelial cells had been completely detached (necrosed), leaving the engorged and denuded villous coat exposed to view. The hyaline cells in cholera thus float away with the débris of the epithelia in the watery stools; and after death, or if collapse has lasted for some time before death, the extreme contraction of the dehydrated walls of the intestines detach the epithelia imbedded in the glutinous-like matter from the surface mucous membrane, and these cells are consequently found free in the intestinal canal in much larger quantities than if the case has terminated rapidly, as in the present instance, and the post-mortem been made immediately after death; nevertheless, the fact remains that a man attacked by fatal Asiatic cholera passes within a few hours from a state of health to a condition in which the entire surface of mucous membrane, from mouth to anus, is involved in changes such as I have described in this case."

Art. 31.—*On the Influence of Epidemics of Fever in Checking the Advance of Cholera.**

By Inspector-General Lawson, President of the Epidemiological Society of London.

(*The Medical Press and Circular*, May 22, 1872.)

This was defined thus: When a cholera epidemic approached a district in which fever was epidemic, cholera did not become general and frequent within the fever field until the epidemic force of the latter was broken, and *vice versâ*, fever, as an epidemic, did not penetrate a cholera field until the epidemic force of that gave way. Sporadic cases of either disease were often met with a long way within the limits of the field of the other, but they never became numerous until the epidemic force of the prevailing disease had much abated. In treating this subject, it was shown first, that as fever varied much from quarter to quarter, or ran from month to month, it was necessary to take it for periods short enough to bring out these changes, together with the concomitant differences in the frequency of cholera; secondly, as in an extensive district the diminution of fever and increase of cholera may take place at different points in succession, and occupy a considerable time from first to last; it is necessary to select areas so circumscribed as to present this change nearly at the same time over the whole; thirdly, as it was found that enteric fever followed a different course in its increase and decline from typhus and other fevers, and actually increased on many occasions along with cholera, it is requisite that the deaths from enteric fever be separated from those due to typhus and other fevers. To illustrate this question the deaths were taken from

* Read at a Meeting of the Epidemiological Society, May 8th.

the quarterly returns for London for 1848-49, 1853-56, and 1865-68; and those for the principal Scotch towns for 1866 from the reports of the Registrar-General for Scotland. Up to 1868 the English returns included the deaths from all kinds of fever under the term typhus. To separate these into the two components noticed above, the admissions into the London Fever Hospital for the corresponding quarter and year were employed, and, as Dr. Murchison has shown, that the percentage of deaths on the admissions in the typhus and enteric forms was almost identical, while very few deaths occurred in the fever hospital from other forms, the total mortality of London was divided between the two in proportion to the admissions to the fever hospital. Though this method be not altogether unobjectionable, yet it is the only means available for the purpose, and it is believed it affords a fair approximation to the truth. In the Scotch towns the deaths are given under the designation of typhus, enteric, relapsing, simple continued, and infantile remittent. The typhus, relapsing, and simple continued have been taken together, also the enteric and infantile remittent. These will be indicated both for London and the Scotch towns by the terms typhus and enteric groups respectively. It was shown, that in London in 1848, and up to the second quarter of 1849, the deaths from the typhus group were evidently above the average, and that cholera did not attain great force until the third quarter of 1849, when the mortality from this group fell below it. In 1853 the deaths from the typhus group were high the first two quarters, and they fell considerably the last two, and in the fourth there was a little cholera. In the first two quarters of 1854 the mortality from this group rose again, and cholera almost completely disappeared, but in the third quarter when the fever mortality fell to half what it had been the previous one, a severe epidemic ensued. During the first three quarters of 1855, the typhus group caused a mortality about the mean, in the last it showed a disposition to rise, and during 1856 it remained high; at the same time cholera was prevalent in Northern Europe, but there was scarcely a trace of it in London. In 1865 and the two first quarters of 1866, the typhus group of fevers caused a mortality varying considerably, but in every quarter above the mean; in the last two quarters of 1866 this fell slightly below the mean, and was accompanied by the mildest epidemic of cholera experienced in this country. During 1867 and first two quarters of 1868, the typhus group fluctuated about the mean, but in the third and still more in the fourth quarter of the latter year, the mortality from it increased; in 1867 there had been a considerable epidemic of cholera on the shores of the Mediterranean and in the south of Europe, which was to have been expected in this country in 1868; that year, it will be remembered, there were an unusual number of sporadic cases of malignant cholera in this country, but the disease never attained the development of an epidemic. In Scotland in 1866, cholera prevailed chiefly along the east coast from Edinburgh to Aberdeen; at Perth it was rather less severe, and at Glasgow, Paisley, and Greenock the mortality was very small. At all it attained its chief development in the fourth quarter. The typhus group of fever had been very prevalent in most of the Scotch towns in 1865, and continued so into 1866. In Edinburgh, Dundee, Aberdeen, and Perth it fell considerably towards

the fourth quarter; in Leith there was a slight rise in the latter; in Glasgow and Paisley the mortality from this group fell to the third quarter, but then increased again, and at Greenock the rise proceeded quarter by quarter, until it reached the annual ratio of 25·4 in the fourth. Here, as in London, cholera became prevalent along the east coast only when fever had been much reduced, and in Glasgow, Paisley, and Greenock with a higher mortality from fever, and an increase of the rate in the last quarter, the cholera was experienced very slightly.

Art. 32.—*The Treatment of Small-pox.*

By Robert H. Bakewell, M.D.

(*The Pathology and Treatment of Small-pox*, pp. 49. London, 1873.)

In cases of simple discrete, or of mild semi-confluent small-pox, Dr. Bakewell leaves the patient to nature. In severe cases, in the stage of primary fever he applies leeches to the temples, gives diaphoretics, packing in the wet-sheet two or three times a day. The pain and fever caused by the eruption may be relieved by warm fomentations. Poultices to the face and other parts are of great service. As soon as the varioles become prominent they should be pricked with a needle and bathed. To prevent pitting the face should be kept constantly poulticed; charcoal is the best. The soles of the feet and palms of the hands should be carefully looked to. During the primary fever the diet should consist of slops, the bowels should be kept open, and opiates administered, sleep being of the utmost importance to the patients. About the fourth or fifth day of the eruption, bark combined with opium should be given, and a more nourishing diet, with egg-flip and a little wine or brandy.

Art. 33.—*Small-pox Imported into Iceland by French Fishing Vessels, Stamped out by Quarantine and Sulphurous Fumigations.*

By J. Hjaltelin, M.D., Chevalier of the Legion of Honour; Knight of the Order Dannebrog, &c.; Chief Physician in Iceland.

(*British Medical Journal*, November 4, 1872.)

In the middle of April last four French fishing vessels came into the harbour of Reykjavik, with three men on board with confluent variola.

Vaccination and revaccination were immediately instituted, with as much speed as was possible, throughout the whole country. A quarantine hospital was erected in the neighbourhood of the town—an old large house, situated about half an English mile from the town. The hospital was fitted with beds and some necessary furniture; a medical student, with some servants, were lodged in it, and they were strictly prohibited from having any intercourse or communication with people outside. Dr. Hjaltelin visited the hospital daily, and being a firm believer in the

power of disinfectant and antiseptic remedies, he could not long hesitate in his plan, and resolved to try these remedies one after another. The chief question appeared to be whether he should use the oxygenating or the disoxygenating compounds of this class, but for various reasons he determined to try sulphurous acid both externally and internally: externally in the form of fumigation by burning refined sulphur in the sick rooms, and internally by giving sulphurous acid mixed with pure water. The effect was very highly encouraging, and it soon became evident that, although the patients at first had a great aversion to the fumigation, and complained of the strong and pungent sulphurous odour, they soon felt the good effects of it. At the same time they got about a drachm of the ordinary sulphurous acid internally, mixed with pure water, every third hour. The result of this treatment was very satisfactory, for not only did the eruptive fever and the heat diminish, but in the milder form of the disease the vesicles dried very quickly, leaving the skin covered with thin brown scales, which soon fell off. Out of twenty-two patients treated in this way only one died, who was brought to the hospital in a moribund state.

Dr. Hjaltelin found that the tension of the skin was very much relieved by the external use of linseed oil, mixed with one-fifth part of carbolic acid, rubbed into the surface with a soft brush. Bed-sores and secondary abscesses were treated in the same manner.

In order to protect the sight he used nitrate of silver, which he thought more sure than collodion.

Dr. Hjaltelin thinks that the use of the sulphurous acid fumigation and the sulphurous acid internally evidently mitigated the primary and secondary fevers; the heat of the body was remarkably lowered, and the thirst was quenched even when the primary and secondary fevers ran very high.

The symptoms generally following the primary and secondary fevers of small-pox—as the pains in the back and the articulations, severe headache, vomiting, ptyalism, &c.—were evidently mitigated by the internal use of the sulphurous acid.

Under these measures the attack was entirely limited to the strangers, not a single inhabitant of the island being affected, though experience has shown that the Icelanders are, no less than other people of the globe, extremely liable to the small-pox contagion.

Art. 34.—*On Tertiary Inguinal Adenopathy; Gummatous Lymphangioma.*

By M. Verneuil.

The following remarks on M. Verneuil's case are given in the *Annales de Dermatologie et Syphiligraphe*, No. 2, 1872–73:—

M. Verneuil has given a detailed and very circumstantial report of a case which he thinks proves the existence of the lesion designated by the above title.

A poor man, aged fifty-three years, who had previously suffered from other suppurative osseous lesions, was admitted into the Lariboisière Hospital with disease of the left os calcis of twelve months'

duration, and which at irregular intervals had been very painful. Some antecedents badly described by the patient induced M. Verneuil to order iodide of potassium, but as this agent was not well tolerated, its administration was discontinued. Shortly after the patient's admission a sequestrum was removed from the centre of the diseased bone. This operation, however, though a very simple one, was followed by neuralgia, which did not yield to any remedy save quinine. In consequence of a purulent infiltration at the lower part of the leg, the leg was amputated below the knee. The operation was followed by a repetition of the neuralgia, which again yielded to quinine.

The stump, notwithstanding phlegmatic and gangrenous complications, finally cicatrized, when swelling of three glands was observed in the corresponding groin. These ran together, and formed a large and painful mass in Scarpa's triangle. At the end of the following week M. Verneuil opened what he thought was a scrofulous abscess, but was surprised to see a discharge, not of pus, but of thick black serosity, mixed with blood and a very small quantity of pus. The focus did not diminish, notwithstanding two applications of Vienna paste and detersive dressings, which finally led to the development of healthy granulations. Soon, however, a very unfavourable general condition (cough, insomnia, anasarca) caused renewal of the local destruction, and besides, there appeared, at a distance of four centimetres from the wound, a hard lump, which slowly ulcerated.

M. Verneuil recognised in this solution of continuity the characters of a syphilitic ulcer, and prescribed 0·05 grammes of proto-iodide of mercury, to be taken in the morning, and one gramme of iodide of potassium to be taken at night. Neither of these remedies were tolerated for many days. The local application of tartrate of iron and potash cleansed the base of the ulcer. Debility, hectic fever, and cough made constant progress, and the patient succumbed at the time when M. Verneuil was just about to ligature the femoral artery in order to guard against the results of its giving way.

Autopsy.—No glandular enlargement was found in any other superficial region of the body. The liver was nutmeggy. The right lung presented cicatrizations and indurations, the results of extensive tuberculizations. Similar lesions were found in the left lung, associated with pneumonia at the base, partly inflammatory, partly hypostatic.

The ulcerated cavity in the groin occupied the centre of a tumour situated upon the sheath of the femoral vessels. It could be distinguished from the surrounding parts by its rosy-white colour and very firm consistence. This was evidently a gummatous tumour in process of central softening. Notwithstanding its large dimensions (five centimetres by three), it had not been recognised during life on account of its deep situation. Two centimetres below that there was another, but harder and smaller, tumour found. Externally to the ulcer was another small tumour which had contracted close adhesions to the deep surface of the dermis.

On the borders of the ulcer above the crural arch and externally to the artery, and also to the inner side of the vein, were found several glands presenting the same structure as the different tumours of the thigh—that is to say, a very firm and elastic tissue of a dull white to a

rosy colour, and which grated under the knife. "There could be no doubt," states M. Verneuil, "that the iliac and inguinal glands were affected by gummatous productions in a condition of crudity, or of more or less advanced softening."

These conclusions, so highly original and instructive, seem to be more interesting from a doctrinal than from an etiological point of view. M. Verneuil, endeavouring to determine why the glandular engorgement in a subject who had been so long predisposed did not appear until after the extraction of the sequestrum at the amputation, assigns to this double surgical traumatism the sole pathogenic part which can literally be attributed to it, that of a *cause of evolution* acting on a diathesic subject. It was owing to this that the lesion was a local one, and that the engorgement affected only the glands which corresponded to the diseased limb.

But was this general cause really syphilis, as M. Verneuil indicates? Doubt is favoured by the following facts: The absence of precise antecedents; the previous absence, according to the patient's statement, of any other secondary or tertiary specific symptoms; the double relapse, and the improved appearance once presented by the wound under the sole influence of topical remedies. To these facts may be added the point suggested by M. Verneuil himself, that ulcers resulting from softening of gummata are early subjected to an excessive phagedænic process, as occurred in this case. "Notwithstanding these objections, we think," writes the editor of the *Annales de Dermatologie*, "from the aspect of the diseased tissues, not that the syphilitic nature of this lesion was placed beyond doubt, but that syphilis was the most likely cause of the lesion, and the case reported by M. Verneuil should be placed among those which science expects and has need of before authorizing the formation of a new class of syphilitic affections, such, for instance, as *tertiary adenopathy*."

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 35.—*On some Results of Treatment in Affections of the Nervous System.**

By CHARLES ELAM, M.D., Assistant-Physician to the National Hospital for the Paralysed and Epileptic.

(*The Lancet*, May 3.)

This paper is almost exclusively devoted to therapeutics, and subsidiarily to prognosis. It is divided into two parts: the first relates to the treatment of certain forms of brain disease; and the second to that of epilepsy, considered more as a collection of phenomena than as any distinct pathological entity.

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* Read at a Meeting of the Royal Medical and Chirurgical Society, April 22nd.

In the first part, three cases are related where striking and unexpected benefit resulted from treatment by the bichloride of mercury.

The first case was that of a boy, aged six, who, on being brought first to the hospital, presented every appearance of being affected with an advanced organic disease of the brain—most probably of tubercular origin—characterized by imperfect paralysis, squinting, double vision, and stammering, with greatly enfeebled faculties. As it was considered that no treatment could render the case more hopeless than it appeared to be, he had prescribed half-drachm doses of the solution of bichloride of mercury, and was ordered to be kept in the recumbent position. This treatment was continued without change of any kind for two months; at the end of which time recovery was complete. There was no trace of disease, bodily or mental, to be detected.

The second case is one of a female child, aged three, presenting the aspect of perfect idiocy, with general paralysis both of upper and lower extremities, loss of speech and power of attention, with involuntary and constant passage of urine and fæces. For similar reasons this case was treated like the former; and in one month the child was able to run about, to attend when spoken to, and to attempt to imitate articulate sounds when told to do so. A change in medicine was followed by an immediate and serious relapse, and the bichloride had again to be resorted to, when improvement again occurred. The child is still under treatment, but very much improved in every way.

The third case is one of sub-acute congestion of the brain in an adult, where treatment by the bichloride produced the most favourable results.

The second part of the paper relates to the treatment and prognosis of epilepsy, and the propositions attempted to be illustrated are as follows:—

1. That during the last five or six years our relations as a profession to epilepsy have greatly changed. Formerly this disease was considered one of the most serious and intractable that we had to contend with; whereas now, in its relation to treatment, it will compare favourably with any other forms of chronic disease.

2. That the great majority of cases receive benefit from treatment at the outset; and that a by no means small proportion appear to be cured from the first, never having another attack after the commencement of the treatment.

3. That another large section resist treatment for some time, even months or years, after the first improvement and subsequent relapse, and yet ultimately yield to it and recover; that is, the intervals are so prolonged that it amounts to a virtual cure, years elapsing without any attack.

4. That hereditary and congenital epilepsy, and also that resulting from injury to the head, are in many cases amenable to treatment, often with very great relief and indefinite prolongation of the intervals, and in some cases appearing to be entirely cured. One of these undoubted cases has been seven years without any return of the affection.

5. That the most intractable cases may be classified under three heads:—(*a*) Those that are both congenital and hereditary; especially where there has been not only epilepsy but insanity amongst the ancestors; (*b*) those where there is faulty formation of the head, as want of

bilateral symmetry, or, what is worse, marked deficiency in the cerebellar region; (*c*) those cases where the head is well proportioned, but much smaller than the natural standard, as, for instance, the occipito-frontal circumference, ranging from eighteen to nineteen inches in the adult.

These are probably the cases most rebellious of all to treatment.

Cases are related illustrative of these positions.

The treatment chiefly relied upon is founded upon the employment of the bromides of potassium and ammonium alone, or combined with ammonia, chloric ether, the alkaline carbonates or iodides, tonics, arsenic, belladonna, &c. The most important adjunct, however, in the writer's opinion is the chloral hydrate, which, when given in doses of ten to fifteen grains with the bromides, rarely fails to reduce very greatly both the number and violence of the attacks, and sometimes, even in old and hopeless cases, puts an entire stop for some weeks to the fits.

It is remarked, also, that one of the most successful of the hereditary cases was treated entirely by digitalis and iron, no bromide having been given.

Art. 36.—*On a Case of Epilepsy Consecutive to a Lesion of the Sciatic Nerve.*

(*Gazette Médicale de Paris*, No. 15, 1873.)

The *Centralblatt* of March 15th contains an analysis of a case which will be found very interesting by those acquainted with the researches of Dr. Brown-Séquard on the artificial production of epilepsy. It is known that section of the sciatic nerve of a guinea-pig is sufficient to create the development of a convulsive affection possessing the characters of epilepsy. In many cases of epilepsy consecutive to lesion of the sciatic nerve are rare, and although some have been published, the following is worthy of being put on record:—

The patient was a soldier, aged twenty-four, whose left thigh had been injured by a bullet on November 7th, 1870. The projectile, although visible, had been so deeply driven in that it could not be removed. The injury was followed by swelling of the limb and intense fever. On May 26th of the following year the patient suffered for the first time from cramp, which, however, was of short duration. From March 3rd, he suffered every second or third day from convulsive attacks which were so violent that he fell out of bed. They lasted on an average for two hours. The wound was then cicatrized and the projectile could no longer be recognised by palpation. After a time these attacks came on less frequently and were not so severe; the health of the patient however still declined. Each attack was preceded by pains along the course of the sciatic nerve. From this region the pain was propagated to the left side of the pubis and then along the central column, when the patient became unconscious. On examination one could make out at the anterior portion of the thigh a cicatrix which was painful on pressure; this corresponded to the opening of entrance. Three centimetres below this cicatrix was a spot which also was very painful on pressure. At the urgent request of the patient his medical attendant, Dr. Schaeffer, endeavoured on February 2nd, 1872, to find the projectile. Chloroform having been

administered, an incision was made between the semi-tendinosus and biceps muscles, and a dissection performed as far as the nerve which was surrounded at this point by a hard cicatrix of connective tissue. The ball was not found. This operation was followed by intense fever and the formation of an abscess at the inner part of the chest; which abscess was opened. In the middle of April the two wounds were cicatrized. Early in May the patient was able to move about on crutches. From the last date up to November, when this report was written, there had been no return of the epileptic attacks.

Art. 37.—*Neuralgic Pain in the Liver.*

By S. O. Habershon, M.D., F.R.C.P.

(*On the Pathology and Treatment of some Diseases of the Liver*, pp. 91. London, 1872.)

Neuralgic pain in the liver may, it is stated, arise from at least three different causes :—

"First, it may be a sensation of fulness and throbbing, and of distress at the scrobiculus cordis, which is due to distension of the right side of the heart. This state is relieved by mercurials with squill and digitalis; by purgatives and by diuretics; and, in fact, by any of those means which lessen the vascular strain on the right side of the heart.

"Secondly, the pain may be situated across the epigastric region, and is due to the gastric catarrh; the food is imperfectly digested, and becomes coated with a thick envelope of mucus; and flatulent distension is the result. The pain thus produced is often most distressing to the patient; the distension of the stomach impedes the action of the diaphragm, and embarrasses to a greater degree the crippled heart. Hæmorrhagic erosion may also be induced, and coffee-ground vomit. This symptom—pain—is lessened by the remedies already indicated, and also by the use of mineral acids, by nux vomica, by carbolic acid, &c., the diet being meanwhile carefully regulated.

"A third kind of pain is evidently of a neuralgic character; it is not angina pectoris, but it is abdominal; and I have noticed its locality as situated deeply behind the first part of the duodenum—severe, almost like gall-stone, but without jaundice or its other symptoms; it is not connected with the stomach, for it is not affected by food, but paroxysmal, and recurring sometimes with great regularity. The remedies we have mentioned may be used to their full extent; mercury even to the verge of salivation, digitalis till it can no longer be borne, purgatives may be used freely, and the anasarca removed by puncturing the legs; but still this severe neurosis continues; it appears to be due to exhausted nerve-function, and of those nerves of which we have already spoken. Narcotics and anodynes afford the only means we possess of palliating this distressing symptom."

Art. 38.—*On Galvanism in the Treatment of Insanity.*

By A. H. Newth, M.D.

(*Journal of Mental Science*, April.)

Dr. Newth, at Dr. Williams's request, has conducted during the past six months several experiments with the galvanic battery (Emil Stöhrer's) in mental diseases. He records the results of his observations, and thinks that in those cases where there seems to be a want of tone in the nervous system, the continuous electric current has in the majority of cases a most marked beneficial effect. He believes that an almost unerring guide as to whether, after a few applications, it will do good, is to notice the state of the pulse; if this increase in force and slightly in frequency, there is a great chance of the treatment being successful.

Art. 39.—*The Shower-Bath in Insanity.*

By John A. Campbell, M.D.

(*Journal of Mental Science*, January.)

The conclusions that Dr. Campbell considers himself warranted in drawing from an analysis of 118 cases are:—

That a gentle shower-bath every morning seems exceedingly useful in the treatment of certain states of the nervous system connected with mental alienation, more especially the following:—

1st. Puerperal mania at the dull stage.

2nd. Hysterical mania in young girls.

3rd. A state somewhat similar to the above, seen in boys and young men, dependent on sexual causes.

4th. In cases in which persistent excitement exists without organic cause.

Art. 40.—*On Cerebria.*

By Charles Elam, M.D.

(*Cerebria and other Diseases of the Brain*, pp. 142. London, 1872.)

The diagnosis of cerebria, an acute, idiopathic, diffused inflammation of the entire substance of the brain, uncomplicated with meningitis, may be made from encephalitis and from typhus, according to Dr. Elam, by attending to the following circumstances:—

"From encephalitis it is at once distinguished by the absence of symptoms of excitement and of headache. There are none of those symptoms which are generally described as characteristic of the predominance of meningeal complication; there is not the increased heat nor rapidity of pulse, nor sensory irritability. But the pain in the head is the most certain diagnostic mark. In encephalitis there is always, in the outset at least, great and deep-seated pain. In all the cases of cerebria that I

have seen, where the patient could give a clear account of the symptoms, there has been a slight headache accompanying the first vomiting, but it has passed off—at least so the patients have *said*, so long as they could answer coherently. My opinion is that the pain is there, but that the sensibility or consciousness of it, or power of translating it into words, is benumbed or lessened. There is often an expression of face, a frown, or other outward sign, that suggests the existence of pain when the patient utterly denies feeling any."

Art. 41.—*Lowered Temperature in Injury of the Spinal Cord.*

By Dr. Nieden.

(*British Medical Journal*, February 8.)

At a meeting of the Clinical Society of London, January 24th, Dr. Nieden related a case in which excessive lowering of temperature was observed, after a lesion of the spinal cord corresponding to the first and second dorsal vertebræ. F. D., aged sixty, fell on October 5th, about fourteen or fifteen feet on his outstretched arms; he was insensible for a short time. When brought into the hospital he could give an account of the accident. He complained of great pain across the shoulders and back, but no lesion of the spine could be detected. The lower extremities, and the trunk as high as the second intercostal space, were perfectly paralysed to motion and sensation. The temperature in the axilla was 95°·2 Fahr.; pulse regular and strong, 52. Respiration was carried on only by the diaphragm, 18 per minute. The bladder was paralysed; the urine was acid and free from albumen and sugar. His appetite was good. The treatment consisted in a horizontal position, and the application of twenty cups on the back. For some days there was no great alteration. The temperature rose at first gradually to 98°·6 Fahr., the pulse to 68, and the respirations were 18 per minute; but, on the morning of the third day, the temperature began to sink, so that on the morning of October 10th it was 95°·8 (pulse 52, resp. 16), falling gradually on October 12th, to 90°·2 and 87°·9 Fahr. (pulse 42, resp. 14). The patient was in the same good mental condition as before. On October 13th, the temperature rose again from 86°·2 to 87°, while the pulse became weaker and smaller (40), and the respirations were accompanied by râles. On October 14th, the temperature sank to 84°·3; pulse very weak (34), respirations 14. The mental faculties were quite intact; likewise the digestion. Œdema in both lungs increased. During the night of October 15th the patient was conscious; temperature 81°, pulse 30. His breathing became irregular, and he expired, with a temperature of 80°·6 Fahr. The necropsy showed a dislocation of the first dorsal vertebra upon the second, without fracture. There was a vast ecchymosis in the dura mater. The interior of the cord was softened and transformed into a reddish pulp. The lower parts of both lungs were excessively congested and œdematous; all the other organs were normal. Dr. Nieden remarked that similar sinking of temperature to 80°·6 Fahr. had, he believed, never been observed; but

this case showed that life could be continued with a temperature of 81° Fahr. The decrease of temperature was accompanied by the same sinking of heart-contractions. Difference of temperature between different parts of the body (axilla, rectum, mouth), existed only in a small degree. Literature showed that similar lesions of the medulla or the cervical marrow produced in one case sinking of temperature, while they were followed in another by rising of the temperature.

Art. 42.—*On Intra-Spinal Hæmorrhages.**

By P. Hayem.

(*Archives Générales de Médecine*, November, 1872.)

Hæmatorachis.—The first case of spinal meningeal hæmorrhage with post-mortem demonstration, was reported by Duhamel. From the small number of reported cases which he has been able to find, Dr. Hayem concludes that hæmatorachis is a rare affection. In most instances, it was met only as an accessory manifestation of a more serious affection. Moist cold seems to be a frequent occasional cause; males seem to be more predisposed than females; it has been met with at all ages. It may be met with after an arterial or venous rupture, or after injury, in certain affections of the nervous system, especially the tetanus of infants, rheumatic tetanus, chorea, epilepsy, &c.; in yellow and typhoid fever, in certain poisonings, especially that by strychnine. The effusion may be extra-meningeal, intra-meningeal, or sub-arachnoid.

The hæmorrhage most frequently is extra-meningeal. The blood may be effused into the whole extent of the space which separates the dura mater from the spinal canal. The clots vary much in size and consistence. In no report is any mention made of stratified layers indicating successive outpourings of blood. The effusion never seems to be sufficiently abundant to compress the cord.

Intra-arachnoid hæmorrhages generally occupy the whole height of the medullary membrane and usually cause compression of the cord.

Sub-arachnoid hæmorrhage occurs very rarely; it sometimes accompanies the preceding varieties of hæmatorachis. The details related by observers with regard to its seat are not very precise. This form of hæmatorachis is very often due to an extension of cerebral hæmorrhage.

These hæmorrhages often come on rapidly. One observes weakness of the limbs, contractions, and partial convulsions; sometimes generalized spasmodic shaking. Spontaneous pain has been noticed in almost every case. Death which is sometimes sudden, may not occur until after an interval of some months. In a great number of cases the symptoms of spinal hæmorrhage have suddenly disappeared in the presence of those of the initial malady, tetanus, epilepsy, chorea.

With regard to diagnosis, the absence of loss of consciousness and of hemiplegic phenomena forbids the idea of a cerebral affection; the partial convulsions, the spinal and radiating pains also permit one, in the absence of encephalic phenomena, to eliminate a cerebral affection.

Hæmorrhagic Pachymeningitis.—Internal pachymeningitis has been

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* Thèse Présentée au Concours d'Agrégation pour la Médecine. Paris, 1872.

met with principally in general paralysis, alcoholism and mental alienation; external pachymeningitis in alcoholism with absinthism and in epilepsy. The pathological anatomy of this affection is not very full. Clots or masses of encysted blood, such as occur in hæmatoma of the cranial dura mater, have seldom been remarked. According to Dr. Hayem it is impossible to trace the symptomatology by means of the scanty materials which actually exist on this subject. He thinks that it is to pachymeningitis that one ought to attribute the mild form of spinal hæmorrhage.

Experiments instituted by the author enabled him to verify certain facts which had been gathered from clinical reports. Having pricked an intra-spinal vein in a dog, he found that the three varieties of hæmatorachis described above were at once produced—varieties which indeed were met with simultaneously in the cases recorded. Under the same conditions cranial meningeal hæmorrhage has been observed to follow hæmatorachis; finally, as in the recorded cases, the predominant symptoms were paresis and contractions.

Hæmorrhage of the Cord.—According to the author hæmorrhage of the cord has nothing parallel to cerebral hæmorrhage; the effusion is almost always caused by inflammation of the nervous tissue, and the affection therefore may be called a *hæmatomyelitis*. Sometimes the blood is collected in a kind of anfractuous cavity, at others (and more frequently) it is mixed intimately with nervous substance. The hæmorrhagic centre may vary in dimensions. It is invariably central; the white substance presenting an insurmountable barrier. In recent cases one finds a soft clot; later on a firm swelling. The walls of the cavity are jagged and present over most of their extent an ecchymotic tint. Around the principal centre one finds sometimes a red infiltration or capillary apoplexy; the form of infiltration is that which most resembles capillary apoplexy, or rather, according to the author, red softening; infiltrated, like circumscribed hæmorrhages, are always central. The author was induced to conclude that one had to deal here with a *hæmatomyelitis*, and not with pure hæmorrhage into the cord, by the fact that in an immense majority of cases the grey substance is disorganized over an extent out of proportion to the centre of hæmorrhage. The whole extent of the cord may be affected even when the hæmorrhagic centre is not more than one centimetre in breadth; sometimes numerous centres may be disseminated over an extent of diseased cord. In the reported cases microscopical examination seems often to have been neglected; in one case, however, communicated to the author by M. Duguet, granular corpuscles were found about the hæmorrhagic centre. In cases where the disease has had a slow course one finds signs of diffuse chronic myelitis; considerable swelling of the cells of the ganglia, and of the axis cylinders, and impregnation of the cells with pigmentary deposits. M. Lionville found in the vessels capillary aneurisms analogous to those of the brain. The vessels are usually thickened; and the sheaths are enlarged, distended, and filled by yellow fatty granulations.

Among the causes of hæmatomyelitis the author mentions great fatigue and venereal excesses. In most cases, however, the cause cannot be determined.

The progress of the disease is sometimes rapid, sometimes slow.

"If," states Dr. Hayem, "the symptoms of acute and sub-acute hæmatomyelitis be compared with the different forms of myelitis, a striking resemblance will be found: formication, a sensation of constriction, paralysis, absence of reflex excitability, bed-sores, ammoniacal urine, ascending progress of the disease; all these symptoms may be observed."

In short, the author thinks it impossible to separate hæmatomyelitis from ordinary myelitis. There may exist in the cord as in the brain a kind of apoplectiform softening, capable of producing the same symptoms as hæmorrhage properly so-called, with this difference, that in the brain this form of apoplexy is associated with a sudden obliteration of arteries whilst in the cord the process is of an inflammatory nature.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 43.—*Hypodermic Injection of Sulphate of Morphia in Autumnal Catarrh.*

By WILLIAM MOSS, M.D., Philadelphia.

(*American Journal of the Medical Sciences*, January 1.)

Dr. Moss first tried this remedy in his own case, three years ago, having previously had slight relief from the internal use of morphia, and hoping only for a few hours' respite from the miseries of a violent attack of autumnal catarrh. The relief was immediate and lasting. He has since used it in a number of cases of autumnal and June catarrh with almost invariable success. It is sometimes necessary to repeat the injection one or more times during the period of susceptibility.

ART. 44.—*Muriate of Ammonia in Bronchitis, Catarrhal Pneumonia, &c.*

(*Medical Press and Circular*, June 5.)

In obstinate acute bronchitis after the first intense stage, in catarrhal pneumonia both of children and adults, in bronchorrhœa, and also in ordinary chronic bronchitis, the editor of *New Remedies* says he has obtained more apparent good from the use of muriate of ammonia than any other remedy. Of course, other secondary measures are to be vigorously used—counter-irritants, poultices, support or diminution of food supply, &c. &c., as the case may call for. The best formula for giving the muriate is as follows:—Take of ammonia muriat. ʒij; extr. glycyrrhiz, ʒj; mucil. acaciæ, aqua, āā fʒiij. M. S. Tablespoonful for an adult every two hours—teaspoonful for a child a year old, every three hours.

Sometimes, however, the patients object to the mixture of sweet and salt, preferring the following:—Take of ammonia muriat, ʒij; aqua, fʒvi. Dose as before.

Where the cough is very annoying, 1-20th of a grain of sulphate of morphia, or 10 to 15 minims of tincture of hyoscyamus, may be added to each dose.

In bronchorrhœa, the following may at the same time be used by inhalation twice or thrice daily:—Take of sat. solution of alum, ℥vj., tr. hyoscyam. ℥ss. M.

Art. 45.—*Mercury in the Treatment of Bronchitic Asthma.*

By John C. Thorowgood, M.D. Lond., Assistant-Physician to the Hospital for Diseases of the Chest, Victoria Park, Physician to the West London Hospital, and Lecturer on Materia Medica at the Middlesex Hospital.

(*Medical Press and Circular*, December 18, 1872.)

Ordinary spasmodic asthma is a spasmodic neurosis of the lungs, and may, even in the most severe cases, be quite independent of any inflammatory or organic change in the pulmonary structures. Hence it is that we often get excellent cures by the employment of medicines of the nerve tonic class, such as iron, quinine, arsenic, silver, and zinc, with the occasional assistance of certain sedative preparations, such as belladonna, stramonium, datura tatula, &c.

In dealing with the complaint here called bronchitic asthma, a different plan of treatment is required, and Dr. Thorowgood believes an important medicine in real bronchitic asthma is found in mercury. To illustrate the remedial action of this drug, he appends short notes of a few cases in which mercurial treatment was employed with success.

In bronchitic asthma we have present a more or less active inflammation of the bronchial tubes, complicated with severe and trying attacks of bronchial spasm or asthma, the last being dependent on the first, so that if we cure the inflammation the attacks of spasm speedily cease.

As a general rule these cases of bronchitic asthma arise from cold. The patient is feverish at night, with perhaps some sweating, his pulse is quick, and his urine loaded with lithates. Towards dawn of day, or earlier in the night, he coughs severely, and has to sit propped up in a regular asthmatic paroxysm. There is tendency to basic congestion of lungs, with bronchial *râles*, and at times there may be some hæmoptysis.

Such are the cases in which a small pill of pil. hydrarg. c. pulv. scillæ, or of hydrarg. c. creta c. pulv. ipecac. et ext. conii, at bedtime or oftener, will succeed in giving great and permanent relief.

Art. 46.—*The Treatment of Whooping-Cough.*

By W. Berry, L.R.C.P. and L.R.C.S. Edin.

(*Medical Times and Gazette*, Feb. 28.)

Mr. Berry has found dilute nitric acid in doses of from five to fifteen

minims—according to age—with simple syrup, given every three or four hours, to alleviate the cough and spasm, and apparently cut short the disease.

Art. 47.—*Treatment of Whooping-Cough with Quinine.*

By Dr. Dawson.

(*American Journal of Obstetrics: British Medical Journal*, May 17.)

Dr. Dawson, in a paper on this subject, says that the failure of quinine against pertussis, in the hands of others, is undoubtedly to be attributed to its administration either in large doses at long intervals, or in the form of pills. He invites the profession to give to this treatment of pertussis a careful trial, feeling convinced that, if the following rules be carefully observed, few if any will be disappointed. 1. Give the quinine (sulphate or hydrochlorate) dissolved by acid in pure water only; for children under three years, from 5 to 8 grains, and for older children and adults, 10 to 12 grains, to the ounce. 2. Give not less than a teaspoonful every hour, or, at the longest, every two hours, during the day, and whenever cough comes on in the night. 3. Give nothing afterwards for some minutes to destroy the taste or to wash out the mouth. 4. Continue giving it, notwithstanding the first doses may be vomited. 5. Be sure that the quinine is pure and thoroughly dissolved. He attributes the rapid cure effected by quinine, not to the simple destruction of the fungus, but also to its nauseating bitter taste. The effect of a small amount of a solution of quinine, when taken into the mouth and swallowed, is instantly, from its bitter and nauseating taste, to excite a free secretion of thin mucus from the buccal mucous membrane and the salivary glands; and this softens and renders easy of dislodgment the tenacious mucus secreted from the mucous membrane of the pharnyx. The frequent repetition of the quinine keeps up this free secretion, and thus prevents the mucus from becoming tenacious and difficult of dislodgment. At each act of coughing, therefore, the accumulated mucus is readily loosened and expectorated, and unobstructed inspiration is obtained.

Art. 48.—*Treatment of Phthisis.*

By Dr. Macario.

(*Lyon Médical*, Dec. 22, 1872.)

Dr. Macario attributes very successful results, in the carly stages of consumption, to the use of the following formula:—One ounce of a salt of ammonia and of chloride of sodium, one to two grains of arsenious acid, six drachms of cherry-laurel water, seven ounces of sugar, and three ounces and a half of water—making a syrup, of which a teaspoonful is given morning and evening.

Art. 49.—*How to Prevent Paroxysmal Cough.*

By John Stockton Hough, M.D., of Philadelphia.

(*American Journal of the Medical Sciences*, April.)

The writer, at the age of twenty, while a medical student, took the hooping-cough, and the abdominal tenderness occasioned by the almost incessant coughing was so severely painful that it was necessary, in addition to the usual remedies, to resort to some method to lessen the effect of the diaphragmatic succession, or prevent the paroxysm of cough. The former was in some degree alleviated by placing the arms across the abdomen and bending the body as far forward as possible, thus making considerable compression of the abdominal walls. But this last procedure did not afford sufficient relief; and at the time of a paroxysm the fortunate discovery was made that, *by coughing out with a strong expiration*, and *immediately following it by a long deep inspiration through the nostrils*, succeeded by slightly hurried breathing through the nostrils alone (keeping the mouth tightly closed from the time of the first cough), the paroxysm was generally prevented—rarely coughing more than once, instead of six to twelve times, as was the case when this precaution was neglected.

This fact seems to favour the theory of reflex irritation of the fauces, from the sudden access of cold air at the gasping inspiration usually succeeding the first cough, as the cause of the paroxysm; while breathing through the nostrils allows of the air being warmed and moistened by contact with a mucous canal five or six inches in length.

Art. 50.—*On Areolar Effusions in Pleurisy.**

By M. Moutard-Martin.

(*Gazette Hebdomadaire*, No. 2, 1873.)

M. Moutard-Martin directs attention to the areolar effusions found in cases of pleurisy. It has been asserted that the areolar effusions found at autopsies are really due to post-mortem coagulation of the fibrine, which coagulation encloses the fluid in a great number of cavities more or less complete. This explanation is faulty, for areolar exudations exist clinically, as may be seen from the two following reports of cases:—

The subject of the first case was a woman, aged forty, who was admitted into the Beaujon Hospital with abundant pleuritic effusion. The first puncture gave issue to more than one litre of fluid. In a short time the fluid was reproduced. The second puncture gave exit to more fluid than was withdrawn at the first operation. Fluid was again poured out, and a third operation performed, but on this occasion the fluid came away in drops, and not more than 150 grammes was obtained. Still all the signs of a vast effusion existed. The patient succumbed to marasmus. At the autopsy the pleural cavity was found filled by a jelly-like mass in which were numerous cellular arcolæ containing serosity.

* Communicated to the Société des Hôpitaux, Paris.

In the second case, M. Moutard-Martin was called to see a gentleman suffering from pleurisy, in the treatment of which thoracentesis was found to be indispensable. The operation was performed with M. Potain's aspirator. Two litres of serous fluid were removed, and a few days after the operation the patient was doing well. Fifteen days afterwards unfavourable symptoms returned, and there were evident signs of a large effusion. A puncture was made with the medium trocar of Potain's apparatus, but the fluid passed only in drops. The trocar, however, had been forced well into a cavity which was filled with fluid. In moving the point of the trocar from side to side, M. Moutard-Martin could feel a fine crepitation and a few drops of fluid passed forcibly through the tube; he at once concluded that there was an areolar effusion, and turned his trocar in all directions in order to tear down the cellular boundaries, and so obtained a large quantity of fluid. The patient, when last seen by M. Moutard-Martin, was recovering.

Art. 51.—*On Elevation of Temperature in the Subjects of Acute Pleurisy immediately after the Operation of Thoracentesis.**

By M. A. Laboulbene.

(*Gazette Hebdomadaire*, No. 48, 1872.)

Wishing to determine the influence produced by the removal of the pleural liquid effusion on the temperature of patients suffering from acute pleurisy, the author placed a thermometer in the rectum immediately before and after the operation of thoracentesis. He found out that the temperature taken with the same instrument marked after the operation an elevation of the column by several tenths of a degree.

Six cases are cited in support of this assertion.

In order to account for the constant elevation of temperature made out in the patients from whom pleural serosity had just been removed, it is necessary to consider the condition of the respiratory organs before and after the operation. In all patients the lung surrounded by the pleural effusion can perform very little, if any, of its function in consequence of the compression to which it is submitted. Immediately after the evacuation of the fluid the air penetrates into the pulmonary vesicles, as may be demonstrated by the cessation of dulness of percussion, the return of the thoracic vibrations, and the perception of the respiratory murmur on auscultation. But the organic conditions in the lung being changed by the removal of the pleural effusion, the respiration is now carried on in parts where it was previously absent. Therefore the molecular actions which do not take place in the compressed lung may be renewed as soon as the flux of blood to the lungs returns to its normal state. These new conditions suffice to explain the elevation of the bodily temperature.

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* Communicated to the Académie des Sciences, Paris.

Art. 52.—*Clinical Remarks on Empyema.*

By Samuel Wilks, M.D., F.R.C.P., Senior Physician to Guy's Hospital.

In empyema the lung of the affected side becomes contracted, condensed, and unable to expand; consequently, when the fluid in the pleural sac becomes absorbed, the chest walls gradually retract. On the healthy side the lung becomes the seat of a compensatory hypertrophy, just as one kidney enlarges if the action of the other be interfered with. The cure of a case is therefore very tedious, as time must be allowed for the recession of the firm and resisting chest walls. The walls must fall to the lungs, as the lungs cannot expand to the walls. It is impossible for the lung to expand when covered with a layer of lymph. Dr. Wilks was unable to expand a lung post-mortem by means of the bellows, in a case of pleurisy of but six weeks' duration, but when he removed the layer of lymph from the visceral pleura, expansion was readily performed. If there are no signs of absorption of the pus, it is the best treatment to make an opening into the sac, and evacuate the contents. The cavity will then gradually close, partly by the formation of granulations, but chiefly by the recession of the chest walls. Care must be exercised to prevent decomposition of the matters that collect in the sac. This is best done by washing out the cavity several times daily with some carbolic acid solution or Condy's fluid.

Art. 53.—*Cases of Empyema.*

By G. H. Evans, M.D., M.R.C.P.

(*St. Thomas's Hospital Reports*, vol. iii., 1872.)

In this paper Dr. Evans gives notes of eight cases of empyema which presented themselves in St. Thomas's Hospital in the year 1872. Of the eight cases, five were tapped, and in four (including one that was tapped), pus was evacuated through the bronchi; of the four latter, three progressed favourably; of one, the result is doubtful; of the five former two recovered, two died, and one is still under treatment.

Art. 54.—*Pyrexia in Phthisis Treated by Cold Baths.*

By C. Theodore Williams, M.D.

(*British Medical Journal*, January 11.)

At a meeting of the Clinical Society, December 13, 1872, Dr. Williams brought forward three cases of pyrexia in phthisis treated by cold baths. He stated that it had been his custom for the last year and a half to have the temperature of a certain number of hospital cases taken twice or three times a day, for periods varying between a week and a fortnight before any decided treatment was attempted. In many instances the pyrexia had subsided under the influence of rest, abundant food, and an equable atmosphere (60° to 63° Fahr.). In others it had

persisted, and assumed a type sufficiently well marked to afford a characteristic tracing. In a third class it seemed to follow an extremely irregular course, and to be governed by no fixed laws. The second class was chosen for experimental treatment; and Dr. Williams, having tried various drugs without marked effect, and having noted the good results of cold immersions in the hyperpyrexia of fevers and acute rheumatism, and the cold douche practice at Görbersdorf and Davos in cases of phthisis, determined to give cool immersions a cautious trial, as, except Dr. H. Weber, no one in this country had, he believed, done so. The patients were two males and one female, aged twenty-seven, fifty-six, and twenty-five respectively, and were instances of chronic phthisis marked by a high degree of pyrexia. In two, both lungs were extensively affected, and in one of them a cavity existed. In the third, the disease was one-sided and limited. The patients were submitted to baths of about 90° Fahr., which were rapidly lowered to 70° and 65° Fahr., the time of immersion varying from thirty to forty-three minutes. The effect in every case was an immediate reduction of temperature, which continued to fall for some time after the patient's removal to bed. The reduction in one instance amounted to 6° Fahr. In all it was temporary, the temperature soon rising again; but in one case it never rose to the same height as before the bath, and in two it gradually subsided, marked improvement, general and local, taking place in the patients. In the third case, one of advanced disease with a cavity, three baths were given; and, though only a temporary fall of heat took place, great improvement in appetite, sleep, and action of the skin followed. Throughout their pyrexia, all these patients steadily gained weight; and Dr. Williams drew attention to this fact, which had been noted by himself and others, as being directly opposed to Niemeyer's doctrine on the subject. Dr. Williams asserted that the cold bath did no harm, that it improved the appetite, induced sleep, and temporary lowering of heat; but he did not urge it, except in cases of very obstinate pyrexia.

Art. 55.—*On the Various Modes of Contraction of Cavities in Phthisis, and their Results.**

By C. Theodore Williams, M.D.

(*Medical Press and Circular,* February 5.)

The author commenced by observing that it was very difficult to foretell contraction of cavities, and remarked that when it took place the patient was by no means out of harm's way, for the contractile process might overstep the required bounds, and seriously obstruct respiration and circulation, causing death by dyspnœa and dropsy. Moreover, fresh diseases might arise in the other lung. Contraction of cavities, according to Dr. Williams's statistics of 1000 cases, occurred in six per cent. of patients in the third stage, and the void was filled in by one or other of the following means:—1st. By expansion of lung tissue around the cicatrix. 2nd. By an expansion and drawing over of the opposite lung to the affected side. 3rd. By displacement of the neigh-

* Read at a Meeting of the Medical Society of London, January 13th.

bouring organs, the heart, liver, stomach, and spleen. 4th. By collapse of the chest walls. Dr. Williams then dwelt upon these modes of compensation, and explained the changes which the physical signs undergo during contraction, especially the increase of resonance over the former seat of the cavity and the shifting of the cavernous sounds to the posterior regions of the chest previous to their disappearance. This was owing to contraction always taking place towards a fixed point, which was generally the root of the lung, but not necessarily so, as it might be some spot where the pleura was strongly adherent. A contracting cavity of the left lung, as a rule, caused more displacement of organs than one of the right. When the cavity was in the right lung, the liver might be raised, the left lung drawn across and the heart considerably displaced upwards, outwards, and in the direction of the axillary region, which it sometimes reached. Collapse of the chest-wall generally took place in all cases of contracted cavity, but often at a late date, the expansion of the healthy lung and the displacement of organs, particularly the abdominal, sufficing to fill the void for some time. Several cases were given to illustrate these points. The author then drew attention to the various periods required for contraction of a cavity in these cases. In some it took place in two months, in others it occupied two years, the size of the cavity being no index of its rate of contraction. The results of the process on the general health of the patient were then considered, and it was pointed out that in some patients the contractile process caused so much obstruction to the respiration and circulation as to create great and increasing dyspnœa, irregular action of the heart, and eventually death. Another termination was by albuminuria (dropsy), and the few kidneys examined after death showed signs of degeneration.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 56.—*A Study of a Case of Heart Disease, probably Malformation.**

By JAMES BROADBENT, M.D.

(*The Lancet*, Dec. 4, 1872.)

The patient, a young woman, aged thirty-one, who had never had acute rheumatism, or an illness of any kind, came under observation on April 7th last, having been ailing for six or seven weeks, but doing her work up to the day before her admission into hospital. She was well nourished, had a good colour and facial expression; her respiration was tranquil, but she felt faint on standing, and the pulse at the wrist ranged between 120 and 130, was irregular in force and frequency, excessively small and feeble, and sometimes imperceptible. On examining the heart, the apex-beat was a little displaced outwards, the area of dulness slightly larger than normal, and extending for an inch or an inch and a half to the right of the lower sternum. The impulse was short, sharp, and like a tap; the first sound loud and sharp, resembling an exaggerated second sound.

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* Read at a Meeting of the Medical Society of London, Nov. 25th.

At and near the apex the sharp first sound was alone audible. The second sound became audible as the base of the heart was approached, and had a muffled character, and it could be heard in the heart. In the third left interspace, close to the sternum, was heard a short, smooth diastolic murmur, but only over a very limited spot covered by the stethoscope. It was at first not easy to decide whether the heart affection was old or recent, but the subsequent progress left no doubt that it was old. Later, the apex-beat disappeared from the situation in which it was first felt, and the area of dulness diminished, while a vibratory impulse was perceptible in the top third interspace outwards, one inch and a half from the edge of the sternum, and more feebly below the upper sternum; a presystolic murmur ran up to the still short sharp sound within the apex. The second sound was strikingly reduplicated at the base; the diastolic murmur already mentioned was heard at the left edge of the sternum. So far as the sound went, the case resembled very much constriction of the mitral orifice, but the diastolic murmur was difficult to explain, as it was heard over too small a spot to be due to regurgitation, a supposition which was, moreover, contradicted by the reduplication of the second sound. The patient took first iron and quinine, to which in a few days was added infusion of digitalis. There was marked improvement in the general condition, and in the physical signs until April 19th. Ten days after admission she had congestion of both lungs, with elevated temperature and distress in breathing; the heart became greatly distended during the attack, and not only dulness, but impulse, was found to the right of the lower sternum, showing that the dilatation was chiefly of the right carotid. The sounds became audible over the entire chest, front and back. A systolic aortic murmur was also developed by the powerful action of the heart, and was not subsequently lost; the presystolic rumble at the inner side of the apex became for a short time a murmur, and the vibration an indistinct thrill; the diastolic murmur was at one time inaudible, but it again reappeared, varying in length and intensity. With the evidence of aortic obstruction afforded by systolic aortic murmur, the extremely feeble pulse became more comprehensible, and if the murmurs alone had been taken into account, they might have been explained by mitral narrowing and aortic obstruction and incompetence. The state of walls and cavities was not, however, such as would have been induced by these valvular affections, and, as has been previously stated, there were grave objections to the supposition of regurgitation from the aorta. The pulmonary congestion was one of short duration, and the patient gradually improved, the physical signs varying somewhat. When she began to walk about, an altogether new murmur appeared, systolic in time, audible about the fourth left interspace near the edge of the sternum and over the lower end of this bone—that is, below the spot where the diastolic murmur had been heard so long. Taken alone, this might have been attributed to tricuspid regurgitation. It seemed, however, to Dr. Broadbent, that no combination of valvular affections would satisfactorily account for the whole of the facts of this case; while a congenital malformation, which has been occasionally found without cyanosis, and has permitted of survival to adult age, might explain more or less perfectly all the phenomena. This malformation consists in narrowing of the aorta,

together with a perforate or incomplete interventricular septum, leaving a communication between the two ventricles, the aperture being always near the base of the heart. On this hypothesis the explanation would be as follows. In the early part of the ventricular diastole, when both ventricles, in rebounding from the systole, suck in blood from the auricles, the left, having thicker walls and being the more powerful, might be expected to draw in blood from the right, through the aperture in the septum, as well as from the left auricle, which would give rise to the diastolic murmur heard over a limited spot in the left third space; this would be variable in length and intensity from the varying negative pressure on the heart in respiration. While the patient lay quiet in bed, and no pulmonary complication existed, this was the only murmur heard; but when the heart's action became more excited and powerful in consequence of pulmonary congestion, a systolic murmur was developed in the narrowed aortic orifice, and later, when she began to assume the erect posture, which would increase the resistance in the systemic circulation without affecting the pulmonary circulation, the increased energy of the left ventricle forced a part of its contents through the orifice in the septum, producing the systolic murmur heard to the left of the lower end of the sternum. All the murmurs would thus be accounted for, together with their variations, the reduplication of the second sound, which was so striking a feature in the case, the want of synchronism in the closure of the pulmonary and aortic semilunar valves, would be explained by the delay experienced by the left ventricle in expelling its contents through the narrowed aorta. The presystolic vibration sometimes felt by the hand, and the presystolic rumble sometimes audible to the inner side of the apex, were probably incident to the dilatation of the right ventricle. The patient having so far recovered as to be able to return to her work, no opportunity was yet afforded of verifying or correcting the diagnosis; but it is not without profit to study complex and difficult cases independently of such opportunity.

Art. 57.—*Three Cases of Aortic Disease.*

By S. O. Habershon, M.D.

(*The Lancet*, February 22.)

At a meeting of the Medical Society of London, January 27th, Dr. Habershon read three instances of aortic disease which had recently come under his care, and showed the pathological specimens. The first was that of a man, aged thirty-nine, who had suffered from repeated attacks of rheumatism. When admitted into Guy's Hospital in August, 1872, he was suffering from urgent dyspnœa and cardiac distress, with œdema of the lower extremities; a loud double bruit was audible over the aortic valves and in the course of the aorta, but after a few days the bruit changed in character and became a continuous sound. He died on the 10th September, and on inspection the aortic valves were found to be extremely diseased. One was contracted and everted; the valve nearest the pulmonary artery was thickened, ulcerated, and covered with fibrinous vegetation; an ulcerated opening immediately above the valve

extended into the pulmonary artery; the edges were irregular, and the opening was partially blocked up with fibrin. The mitral was thickened, but other structures were healthy. Dr. Habershon referred the changed character of the sound to the ulcerative communication between the aorta and the pulmonary artery. The second case was that of a man, aged fifty-six, who was brought to the hospital in a dying state in December, 1872. He had been engaged in labourer's work, and dated his last illness to a cold taken at Christmas, 1871. Dysphagia came on two months before death, and gradually increased in severity. The patient suffered from dyspnœa and severe pain between the shoulders. There was now a short systolic bruit audible at the apex of the heart. The prostration was extreme. When he was admitted, the aorta was found to be much diseased, especially in the ascending and transverse portion of the aorta. The vessel was enormously dilated, so as to admit a man's fist. On the right side, immediately above the valves, a pouch extended to the right, and the lung in contact with it was sloughing. Other lobules of the lung were in a similar state. At the commencement of the ascending aorta an angle was formed by the contraction of the pouch, and at this part pressure had been made upon the left bronchus and upon the œsophagus; an oval communication an inch in length existed between the two canals, and the ends of the bronchial cartilages projected into the œsophagus. The third instance was a very remarkable one, in which multilocular aneurism of the ascending portion of the arch of the aorta existed. The sac extended behind the sternum, and occupied the normal position of the heart; it perforated the ribs, and a third false sac formed a pulsating tumour extending to the left side of the sternum below the left nipple, in the direction of the axilla. Death resulted from the perforation of the post-sternal sac into the left pleura. The patient was fifty-five years of age. He dated his illness to a blow on the chest, and afterwards he suffered from pain about the left breast, especially on exertion. The attacks became more frequent during the last year of his life, and three weeks before admission into the hospital, at the end of October, 1872, he noticed a swelling in the precordial region. This swelling rapidly increased in size, and became as large as both fists, and pulsatile in character. Darting pain came on with dyspnœa and distress, and when hæmorrhage into the pleura occurred, he speedily sank. The aorta was found to be dilated and atheromatous, and two inches above the valves was an opening three inches in circumference, which passed into an aneurismal sac and then into the subcutaneous sac, the latter opening being between the third and fourth ribs. Forty ounces of clot, and as much serum, were found in the left pleura. The question of differential diagnosis between aneurismal and vascular malignant growth was briefly dwelt on, but the result showed the original opinion of aneurismal disease to have been correct.

Art. 58.—*Use of Digitalis in the Failing Heart and Delirium of Acute Diseases.*

By James Little, M.D.

(*Irish Hospital Gazette,* Jan. 15.)

Dr. Little read a paper on this subject before the Medical Society of the College of Physicians, January 8th, 1873. After alluding to the well-known and valuable investigations of Dr. Stokes and Sir Dominic Corrigan on the condition of the heart in fever, he advocated the employment of digitalis in cases in which the stimulants were either not well borne or were contra-indicated, as, for example, in most cases where there was renal affection; under such circumstances he (Dr. Little) had given digitalis in more than twenty cases, including six of typhus and one of rheumatic fever, the remaining being cases of enteric fever. He usually gave half-drachm doses of the tincture every three or four hours—rarely every hour—discontinuing the medicine when the pulse fell to 80: except in one instance, wine and brandy were also given. The case in which digitalis alone was employed, was one of rheumatic fever, occurring in a merchant, aged thirty-five, who had had symptoms of rheumatism last October, and also had suffered six months previously from dyspepsia, with considerable cerebral disturbance. On the 26th October he remained in bed, his heart was very weak, and his temperature 102°. He was ordered twenty minims of the tincture of the perchloride of iron every fourth hour. Four days subsequently symptoms of cardiac complication supervened. On the 11th November he was delirious at night. On the 18th November his pulse was 100, very feeble; the first sound of the heart was absent, and he had not slept for 100 hours. As stimulants could not be borne, tincture of digitalis, in half-drachm doses, was given every hour. After the eighth dose the patient fell asleep. In consequence of the subsequent occurrence of nausea the tincture was discontinued, and a hypodermic injection, composed of one-eightieth of a grain of atropia, one-fortieth of a grain of digitaline, and one-fourth of a grain of morphia substituted. The patient eventually recovered.

Art. 59.—*On the Production of a Remarkable Endocardial Murmur, accompanied with unusual Slowness of the Pulse.*

By J. Burney Yeo, M.B., Assistant Physician to King's College and the Brompton Hospitals.

(*The Lancet,* December 28, 1872.)

A man, forty-five years of age, came as an out-patient to King's College Hospital complaining of a beating or throbbing at the epigastrium, with pain and tenderness in that region. He complained also of great dyspnœa, and stated that he had suffered from four attacks of rheumatic fever. On examination, a distinct beat, synchronous with the

pulse, could be felt rather low down in the epigastric region. It was lower than ordinary epigastric pulsation, and the heart's apex beat in the natural position. His pulse was regular and of good volume, but very slow, beating only 36 to the minute. On listening over the heart's apex, a very remarkable complex bruit was heard. There was first a loud prolonged systolic murmur, and then, immediately after, two short sounds; so that between each beat of the heart we heard three distinct murmurs: a long and loud murmur (systolic), a short and softer murmur (post-systolic), and another short and soft murmur (pre-systolic). The unusual slowness of the heart's action enabled us to separate this complex sound very easily and distinctly into its component elements. Systolic and diastolic aortic murmurs were also audible at the base.

A few days after the appearance of this patient at King's College Hospital his wife came to say that he had died rather suddenly the night before. As Dr. Yeo was desirous of satisfying himself—(1) as to the cause of the epigastric pulsation and pain (this being the man's chief trouble); (2) as to the precise condition which gave rise to the curious murmur heard; and (3) as to its connexion with the unusual slowness of pulse, he asked and obtained permission to make a post-mortem examination.

On opening the chest the pericardium was found uniformly adherent to every part of the heart's surface. The heart was flabby, its cavities considerably dilated, and their walls thinned, that of the right ventricle being very thin. The right side of the heart was distended with clot, and so was the left auricle, which was enormously dilated to three or four times its natural size. The mitral orifice was considerably diminished in circumference, the segments of the mitral valve were thickened, somewhat puckered at their free edges, and adherent to one another by their adjacent margins. The orifice was nearly circular in form, and about three-fourths of an inch in diameter. The aortic valves were also thickened, and to some extent disabled. A slight festooned fringe of fibrin was observed just beneath the free margin of each valve, and two of the valves were adherent by their contiguous sides.

Dr. Yeo remarks "I can now see how the physical signs observed during life were produced. The first loud and long bruit heard at the apex was clearly a regurgitant one, accompanying the systole of the ventricle. The next short sound was *post*-systolic, and caused by the *commencement* of the flow of blood from the auricle into the ventricle through the contracted and somewhat rigid mitral valve (or it may have been produced, as Dr. G. Johnson suggests, who examined the case with me, by aortic regurgitation, and in that case was diastolic aortic). The third sound was pre-systolic, and coincided with the contraction of the greatly dilated auricle, which slowly and with difficulty gathered up force enough to complete *its* systole. We can also understand how the retardation of the pulse was brought about. The ventricle had to wait, as it were, on the auricle; and the auricle, owing to its great distension, and the thinness of its walls, could only empty itself slowly and with great difficulty. In this way the pulse was delayed, and death was probably caused by the inability, at length, of the left auricle to empty itself."

The epigastric pulsation, so much complained of during the life of the

patient, seemed to be due to the uniform adhesion of the pericardium, by means of which the diaphragm was so stuck to the surface of the heart that at each pulsation it moved with it, and its movements were conveyed by a flatulently-distended stomach to the surface.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 60.—*Treatment of Pyrosis.*

By J. G. BRADEN, M.R.C.S.

(*The Lancet*, February 22.)

For the treatment of pyrosis, Mr. Braden recommends ten grains of subnitrate of bismuth, with five grains of the compound kino powder, suspended in thin mucilage, three times a day.

ART. 61.—*Case of Long-standing Diarrhœa Cured by the Surgical Treatment of an Ulcer of the Rectum.*

By THOMAS ANNANDALE, F.R.S.E., Surgeon to the Edinburgh Infirmary, and Lecturer on Clinical Surgery.

(*British Medical Journal*, December 21, 1872.)

Dr. ——, aged fifty, applied to Mr. Annandale on the 28th of March, 1872, on account of persistent dysenteric diarrhœa. He had recently returned from India, where he had resided continuously since May, 1847. For the last three years he had suffered from constant diarrhœa, which had resisted many remedies carefully tried. He also suffered from much irritation of the rectum, which was supposed to be due to piles. It was an usual thing for Dr. —— to have four, five, or six motions daily, and he had had no "formed" motion for three years. Having made an examination of the rectum, Mr. Annandale ascertained the presence of an ulcer, which was situated about one inch above the anal orifice. This ulcer was on the posterior wall of the rectum, was of the size of a four-penny-piece, and had a depressed surface, with hard edges. It was only slightly painful when touched.

On April 22nd, a free incision was made through the sphincter and base of the ulcer, and this was followed by a decided improvement in the symptoms. On the 21st May, finding that the sore, although much smaller, still presented an irritable appearance, its base was again divided freely. Some inflammation and suppuration of the lymphatics passing up towards the groin followed this second operation; but on the 29th, eight days after its performance, a most marked improvement in the dysenteric symptoms took place. On June 1st the patient had no motion at all; and on June 2nd, one "formed" motion, the first for three years. Since then the patient's progress has been perfect towards recovery; during the progress of the case, milk diet only was allowed.

Art. 62.—*On the Stomach-Pump in the Treatment of Chronic Gastric Catarrh and Dilatation.**

By Dr. Schliep.

(*The Lancet*, December 14, 1872.)

In many cases the results of the application of the stomach-pump had been eminently satisfactory, and appeared in general in the following order:—Vomiting ceased, pains disappeared, appetite and action of the bowels soon became better, the general health was improved, and the patient's weight was increased. In some cases it was found desirable to wash out the stomach with solutions of various medicines; and Dr. Schliep tried soda, creasote, boracic acid, and permanganate of potash with good effect. The patients soon became accustomed to the introduction of the pipe; and, after several applications, the unpleasantness of the operation disappeared entirely. The fear of sucking some mucous membrane into the opening of the tube was almost without foundation, and such an event might be avoided by care and by inserting an india-rubber tube between the pipe and the pump, which would close as soon as any impediment opposed the flow of liquid to the pipe. It happened once to Dr. Schliep, in about six hundred applications of the pump, to bring up a small piece of the membrane, when the patient himself pulled out the tube somewhat suddenly after the finishing of the operation; but no bad consequences followed. Considering the advantages of the stomach-pump in the cases alluded to, Dr. Schliep believes that this method of treatment will take an important place in the therapeutical agents in stomach diseases.

Dr. Cholmeley doubted whether the treatment described was applicable in many cases, and thought the plan heroic, if not barbarous. In some cases of dilatation of the stomach the operation might be useful, but the fact that in one case reported the mucous coat had been injured, and in several others bleeding had occurred, showed that great caution was required in the use of the instrument, and that it should not be used indiscriminately.

Dr. Hilton Fagge thought such cases were more common than was generally supposed, and spoke of the value of actual examination of the abdominal walls when the patient was in the horizontal position as a means of diagnosis, inasmuch as the peristaltic movements could be readily seen. He also related one or two instances of dilatation of the stomach, in which treatment by the pump had evidently benefited the patient.

Dr. Schliep, in reply, adhered to his opinion as to the utility of the operation, and remarked, in answer to Dr. Cholmeley, that he had operated 600 times, not on 600 patients, and hinted that the general use of the stomach-pump in many diseases might assist our knowledge as to the kind of food best digested in particular cases.

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* Read at a Meeting of the Clinical Society of London, Nov. 22nd.

Art. 63.—*On the Use of Belladonna in Intestinal Obstruction.*

By Joseph Morris, M.D.

(*The Lancet*, February 8.)

Two years ago a case of obstruction of the bowels came under the author's care. Every remedy that he could devise to relieve the patient failed. Thinking that the obstruction might be caused by violent contraction of the circular muscular fibres of the bowel, Dr. Morris ordered a suppository of two grains of the extract of belladonna to be passed up the rectum, when in less than two hours a most copious discharge of hard scybala followed, with cessation of all the distressing symptoms consequent on the obstruction. Since that time Dr. Morris has had three similar cases under his care, all of which have yielded to the introduction of belladonna by the rectum.

Art. 64.—*Report of a Fatal Case of Intestinal Obstruction.**

By J. C. Thorowgood, M.D., F.R.C.P.

(*The Lancet*, February 1.)

M. C——, aged sixty, was seen by Dr. Thorowgood on the evening of May 20th, 1872, with Dr. Wallace, of Hackney. The general health had been good up to five weeks previous. On the 16th of May he was seized with severe pains of a griping and twisting character. The bowels had been for several days without action; frequent enemata and purgatives having failed to give any relief, recourse was had to opium, which relieved the pain. When seen on the 20th he had been a week without an action of the bowels; his face was flushed, pulse 88, not thready; tongue dry; frequent vomiting, but not of a stercoraceous nature; no jaundice; no passage of blood by bowels. Abdomen swollen and tense; a solid mass felt on the right side. A large injection was given by means of the gravitation tube; it passed easily into the bowel, and returned, bringing with it a few small pellets of fæcal matter. An ointment of mercury and belladonna was applied over the abdomen, and quarter-grain doses of extract of belladonna were given every two hours. He was seen again on the 24th: tongue quite dry, pulse 88, urine scanty and turbid, and distress extreme. An injection containing extract of belladonna was given, and a pill—composed of half a grain of opium-powder, a quarter of a grain of extract of belladonna, and half a grain of acetate of lead—every two hours. After he had taken about ten pills the bowels acted freely, with immense relief. On the 30th May he had four good consistent motions, and the mass on the right side got much smaller. On June 6th the substance appeared again, with stercoraceous vomiting; for a time he got some relief by taking pills of aloes three times a day, and the mass on the right side became scarcely perceptible, the bowels acting with loose motions under the influence of these pills.

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* Read at a Meeting of the Medical Society of London, January 13th.

On August 3rd he sank, and died quietly. The post-mortem was made the next day by Dr. Wallace, who was allowed to examine the abdomen only. Extensive atheroma of the aorta and iliac arteries was the only morbid appearance found. No stricture or tumour involving the bowel was discovered, though the lower part of the small and the whole of the large intestine were carefully examined. The coat of the large intestine was wasted and thinned to a great degree.—In commenting on this case, Dr. Thorowgood alluded to the importance of careful diagnosis. The rectum, especially, should be examined by the finger and by a bougie or tube, to see if there be present one of those annular strictures high up which were described by Mr. Henry Smith in his Lettsomian Lectures in 1865. The intense twisting pain at first seemed to point to a possible intussusception as the commencement of the trouble. To relieve this belladonna was tried, and this not succeeding, acetate of lead was added, in the hope that, as lead acts powerfully on the muscular coat of the bowel, so as to alter its calibre, it might in some way aid in untwisting the invagination. One case was mentioned in which acetate of lead given thus had succeeded in affording relief, and in the present case, after as much as five grains of the acetate had been given, copious relief followed. The bowels having been once opened, attempts were made to keep them open by enemata and stimulating purgatives, and though these succeeded so far as to remove the swelling on the right side of the abdomen, yet the patient sank and died with all the symptoms during life and the appearance after death of atony and wasting of the bowel.

Art. 65.—*On the Treatment of Chronic Dysentery.*

By Stephen H. Ward, M.D., F.R.C.P.

(*Medical Times and Gazette*, February 22.)

The first thing to be insisted upon is rest in bed, and in the recumbent position, in which the bowels are best kept quiet.

Diet stands next in importance to rest. That kind of diet should be ordered which gives least work to the alimentary canal, which is most likely to be assimilated should the mesenteric glands be implicated, and which will send down to the large bowel a minimum amount of irritating waste material. Milk is the best form of nourishment in these cases; flour boiled with milk is a good combination; farinaceous articles of diet are also admissible. As a rule, the patients do better without alcoholic stimuli; but where there is much prostration these must be given.

It is important that an even temperature should be maintained in the bedroom or ward by night as well as by day. It had long been remarked that patients passing, say, twenty stools in the twenty-four hours, would pass a large proportion of them in the night-time. The action of the skin, which it is desirable not to check, can be evenly maintained in bed. Dr. Ward has found the application of a broad flannel roller in some cases do good by carrying out the indication of support and local surface-warmth. During the period of convalescence, flannel next the skin, and otherwise adequate clothing, are essential.

Special remedial agents render important service in the relief of

various symptoms. An occasional dose of opium at night, where there are irritability and restlessness, may be given, not to lock up the bowels, but with a view of procuring sleep. A dose of castor oil, guarded with laudanum, is often of service in bringing away scybalous fæcal matter that has been retained, and caused griping and distress. For the tenesmus from which some patients suffer much, an injection of starch and opium is the best remedy. The possibility of irritation being kept up by hæmorrhoids must not be lost sight of. The severe and oft-repeated straining in the earlier stages of the disease gives rise at times to prolapsus ani, which in the more advanced stage may become a source of annoyance, and require surgical aid.

The complexion and course of chronic dysentery may be modified by the association of some special cachexia, as that of scurvy, ague, or tuberculosis. Where such exists, the treatment will have to be modified. Where there are evidences of scorbutic taint, lime or lemon-juice must be given. It is here that the Bael fruit, which has enjoyed so much repute in India, will be found useful. If there be any old malarious influence at work, the symptoms will exhibit periodicity—the patients will perhaps be worse on alternate days; and then quinine will be the remedy. Where cough, hectic, etc., point to the tuberculous diathesis cod-liver oil and tonics are indicated.

Art. 66.—*On the Curative Action of Ipecacuanha in Diarrhœa.*

By John C. Thorowgood, M.D., F.R.C.P.

(*The Lancet*, May 24.)

At a meeting of the Clinical Society, May 9th, Dr. Thorowgood read notes of two cases of the Curative Action of Ipecacuanha in Diarrhœa:—

Case 1.—William B——, aged twenty, after passing through an attack of typhoid fever, remained subject to obstinate diarrhœa. He improved somewhat, and was discharged from the West London Hospital in February, 1872. On January 1st, 1873, he was readmitted, having been for some time under the care of Dr. Ferrier, as an out-patient with diarrhœa. When admitted, he had, on an average, ten or twelve liquid motions in the twenty-four hours. These were repeatedly examined, and found of a red colour from admixture with blood; a small amount of shred-like substance was also mixed with them. The patient was not much emaciated; he had a fair appetite, no sickness, no night sweats. His pulse was from 88 to 100; temperature 99°. The abdomen was tense and swollen, and at the left iliac region tenderness was very evident. He had had some chronic mischief at the base of the right lung, but this seemed to have subsided. The urine was loaded with pale lithates, and free from albumen. Treatment consisted in rest in bed, with milk diet and a mixture of chalk with bismuth. After a week being no better, and it being observed that the bowels acted rapidly after food, he got for a few days iodide of potassium, with two drops of liquor arsenicalis. This mixture made him worse, and it was soon

stopped. About the middle of January he was put on a diet of solid meat instead of milk; and had nitrate of silver with opium, decoction of logwood, injections of starch with tincture of opium and powders of mercury with chalk, and Dover's powder. None of these methods produced any change for the better, and the motions had the same characters as before. There was not much complaint of pain and tenesmus. During the first week in February he was ordered two grains of powdered ipecacuanha, with five grains of compound tragacanth powder, thrice daily, in water. On this medicine he soon improved, and the dose of ipecacuanha was raised to five grains. On February 26th, the diarrhœa had ceased; he was passing formed motions, and was allowed to leave the hospital.

Case 2, was that of a young man who for the last six years had been troubled with diarrhœa as a result of wet and exposure in his work as a bricklayer. He usually had six motions in twenty-four hours, liquid, and often mixed with blood. At times he had to lie up for a few weeks. Pain was felt over the region of the liver; the chest was healthy. This man had taken much physic, and he now had two grains of powdered ipecacuanha with five grains of compound tragacanth powder in water, thrice daily. In one week he said he was better than he had felt for the last six years. For the last three days he had passed one consistent motion daily. A few weeks later he came with return of diarrhœa from exposure to wet. He got solution of pernitrate of iron, and this failing to relieve, Indian bael was tried to no purpose. He requested to have the powders again, and under their use he seemed to recover completely. Dr. Thorowgood considered that these two cases of obstinate chronic disease, having apparently no inherent tendency to spontaneous cure, were capable of well illustrating the action of such a drug as the pulv. ipecac. The fact, also, of the remedy acting so well when given pure and uncombined was worth consideration.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

Art. 67.—*Clinical Remarks on Albuminuria.*

By Samuel Wilks, M.D., F.R.C.P., Senior Physician to Guy's Hospital.

Albumen may appear in the urine as the result of a cold. The explanation of this seems to be that the cold sets up in the uriniferous tubules a condition closely resembling that found in the bronchial tubes when they are affected. When the kidney recovers itself the albuminuria disappears. But a cold may give rise to acute tubular nephritis; and even this may be recovered from. The albuminuria dependent on the inflammation produced in this manner is very different from that which occurs as a result of a chronic degenerative change in the tubules of the kidney, which is itself often only a part of a general condition. Their respective prognoses are different. It is difficult to say the exact time at which albuminuria, as a result of acute tubular nephritis, becomes incurable. There is no doubt that many persons who have been condemned have recovered. Dr. Wilks formerly thought that if dropsy and

albuminuria, as a result of acute tubular nephritis, lasted six months, cure was impossible. But he thinks so no longer; for he has seen cases recover after a much longer period than this. One of the first places in which dropsy, as a result of renal disease, shows itself is the subconjunctival tissue. Drs. Bright and Barlow always looked to the conjunctivæ when kidney disease was suspected, and laid great stress on the presence or absence of œdema of this part. When œdema is present the conjunctivæ look bright and glistening, and the eyes appear suffused with tears; but an examination will show that the fluid is beneath, and not upon, the mucous membranes.

Art. 68.—*Pathology of Chronic Bright's Disease with Contracted Kidney, with especial reference to the Theory of "Arterio-Capillary Fibrosis."**

By George Johnson, M.D., F.R.S., Physician to King's College Hospital.

(*British Medical Journal*, December 21, 1872.)

The author began by referring to his discovery of hypertrophy of the muscular walls of the minute arteries in cases of chronic Bright's disease, published in the 51st volume of the Medico-Chirurgical Transactions. This result of a quarter of a century's careful observation is now called in question by Sir William Gull and Dr. Sutton, who, in the recently issued volume of the Transactions, propound doctrines of great novelty relating to the pathology of Bright's disease. They give a brief summary of their conclusions at pp. 295–6. Dr. Johnson now proposed to inquire whether these conclusions are in accordance with pathological facts and with physiological principles.

To prove that hypertrophy of the heart is a consequence of "arterio-capillary fibrosis," and not of degeneration of the kidney, they refer to six cases in which it is said that the cardio-vascular changes were present, while the kidneys were healthy or but little altered in structure. In each of these cases Dr. Johnson maintains that the hypertrophy of the heart was due, not to changes in the minute blood-vessels, but to other obvious causes. In one case (No. 7), aged forty-two, there was emphysema of the lung and bronchitis; in one (Case 10), aged sixty-nine, there was senile gangrene and, of course, degeneration of the larger arteries; in one (Case 20), there was disease of the aortic valves; one patient, who was sixty-three years of age (Case 2), probably had senile degeneration of the arteries, and her kidneys weighed fifteen ounces; another (Case 3) was seventy-seven years of age; while in a sixth case (No. 19), aged sixty-two, there was atheroma of the cerebral and probably of other arteries, his lungs were very emphysematous, and his kidneys weighed only eight ounces. It is assumed by Sir William Gull and Dr. Sutton that kidneys weighing as much as fifteen ounces and as little as eight ounces were alike free from disease.

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* Read at the Royal Medical and Chirurgical Society, Dec. 10th, 1872.

Although it is maintained (pp. 289–90) that there is a constant relation between the "hyalin-fibroid" change in the vessels and hypertrophy of the heart, it is stated (p. 292) that in a few cases this change was seen in the vessels of the pia mater, unassociated with hypertrophy of the heart. The "hyalin-fibroid" change is supposed to lessen the elasticity of the walls of the minute arteries, so as to impede the circulation, and to cause hypertrophy of the left ventricle (p. 290). Dr. Johnson maintains that in this explanation the elasticity of the larger arteries, which acts in aid of the heart as a propelling force, is confounded with the muscularity of the smaller arteries, which antagonizes the heart. Degeneration of the muscular walls of the arterioles would involve, not an increase, but a decrease of resistance, and therefore would not explain the cardiac hypertrophy. It is stated by Gull and Sutton (p. 295) that thickening of the arterial walls is always associated with atrophy of the adjacent tissues. Yet they state (p. 287) that these arteries are thickened in the walls of the *hypertrophied* heart, and they are also thickened in the large white kidney.

Going on to discuss the nature of the "hyalin-fibroid" change, Dr. Johnson maintains that it is not an ante-mortem pathological change, but a post-mortem physical result of the distension of the fibrous tunic of the arteries by the mixture of glycerine and camphor water, in which all the specimens had been mounted before they were examined by the authors of this theory. He maintains that the appearance in question is never seen in vessels examined immediately after their removal from the body, or preserved in dilute spirit, or in a solution of salt of specific gravity 1030, while it is frequently, but not constantly, observed in specimens mounted in glycerine. Normal arteries from the pia mater mounted in these different fluids present a striking contrast; those in dilute spirit or in salt-and-water appearing quite normal, while those in glycerine are often thickened and hyaline.

The "hyalin-fibroid" appearance thus produced may be seen in vessels from subjects at the two extremes of infancy and old age, where death has resulted from diseases having no relation to Bright's disease, and quite unconnected with hypertrophy of the heart. Specimens are preserved from the pia mater of a woman, aged forty, who died of diabetes, and whose heart weighed only six ounces and three-quarters; from another woman, aged forty, who had cancer of the ovary, the heart weighing eight ounces; from an infant, aged eleven months, who died from spasm of the glottis, the kidneys, heart, and all the viscera being quite healthy; and from a boy, aged fifteen, who died from typhoid fever, having been in good health until the attack of fever. There was no post-mortem evidence of disease except such as resulted from the fever. Arteries from the pia mater are preserved in three different fluids. Those in weak spirit and in salt-and-water (specific gravity 1030) appear quite normal, while those in glycerine and camphor water have their fibrous tunic much distended and extremely "hyaline."

The imbibition of fluid by the arterial tunics is a result of physical conditions. A fluid slightly acidulated rapidly passes in, and distends the fibrous tunic, rendering it "hyaline;" then the neutralization of the fluid by ammonia occasions a rapid shrinking of the tunica adventitia, which again assumes its normal fibrous appearance.

The physical conditions which favour the imbibition of the simple unacidulated mixture of glycerine and camphor water would be influenced by various circumstances, such as the mode of death, and the period after death at which the examination is made. It is incumbent on those who maintain that the appearances in question are the result of pathological processes to demonstrate them in vessels which have been unchanged by artificial agents. The glycerine renders the muscular structure in some vessels indistinct; and this has been described as atrophy of the muscular elements. In other vessels it separates the inner from the muscular coat; and this has been mistaken for thickening of the internal tunic of the artery. (See plate v., figs. 3 and 4, in the last volume of the Transactions.) The author denies that the capillaries are thickened; and maintains that arterioles in the pia mater distended by glycerine have been mistaken for capillaries. With regard to the changes in the kidney, their "hyalin-fibroid" character is denied by Dr. Johnson; and reference is made to a paper by Mr. Simon, and another by Dr. Johnson, in the thirtieth volume of the Transactions. Referring to fig. 7, plate vi., in the paper by Gull and Sutton, Johnson declares that they ignore the fact that, in the renal arteries, there is an inner longitudinal, and an outer circular, layer of muscular fibres; and in a transverse section of such an artery they mistake the outer circular layer for the analogue, in position and structure, of the "hyalin-fibroid" condition of the fibrous tissue of the arteries of the pia mater. They deny the existence of muscular hypertrophy; yet some of their own specimens and drawings exhibited at the conversazione of the Society in June were good examples of hypertrophy of the muscular walls of the arteries. Reference is made to a footnote at p. 277 of their paper, in which a doubt is expressed as to the possibility of casts escaping from the convoluted tubules of the cortex.* Dr. Johnson maintained that in the microscopic appearances of some forms of tube-casts we have abundant evidence of their origin in, and their escape from, the convoluted tubes. The more frequent occurrence of hypertrophy of the heart in connexion with the contracted than with the large white kidney he explains partly by the more watery blood in the latter cases exciting less contraction of the arterioles, and partly by the occurrence of waxy or lardaceous degeneration of the minute arteries, which thereby have their contractile and resisting power impaired. To doubt the causative connexion between contracted kidney and hypertrophy of the heart because they are not constantly associated, would be as unreasonable as to deny that a large white kidney is a cause of dropsy because dropsy is sometimes absent. The author disputes the statement that the morbid changes in cases of contracted kidney "are the result of causes not yet ascertained." The most common causes are excess of food and of stimulants, with or without decided gouty symptoms, but he has seen many cases in which the disease has been a result of chronic dyspepsia in persons of strictly temperate habits. The proximate cause of the renal degeneration is the excretion of abnormal products by the gland-cells. This applies to all forms of Bright's disease, whether acute or

* In the note referred to, the word *tubercles* is, without doubt, a misprint for *tubules*.

chronic. The term "arterio-capillary fibrosis" is a misnomer, for the capillaries, except the Malpighian capillaries, are unchanged, and there is no morbid "fibrosis" of the arteries.

The author concludes by thanking Sir William Gull and Dr. Sutton for having so forcibly directed attention to the cardio-vascular changes in chronic Bright's disease. Differing entirely in their pathology, they agree in thinking the subject one of great interest and importance.

Art. 69.—*On Spontaneous Uræmic Intoxication.*

By M. Gigot-Suard.

(*Medical Times and Gazette*, February 1.)

At the meeting of the Académie de Médecine of Jan. 21st M. Gigot-Suard read an interesting paper on "Spontaneous Uræmic Intoxication," the conclusions of which he thus sums up:—

"The injection of uric acid may give rise to uricæmia—that is, the surcharge of the blood with this excrementitious product. Uric acid administered to dogs in quantities of at least twenty centigrammes, and at most four grammes, in the twenty-four hours, during a period of time which has varied from one to two months, has occasioned extremely remarkable results, calculated to throw light on the pathogeny of a great number of chronic diseases. Several times the alkalescence of the blood has so much diminished that it has appeared nearly neutral; and the microscope and chemical analysis have revealed the presence of crystals of uric acid, of oxalic acid, and of urate of soda in that fluid.

"The organs and tissues upon which the uric acid has demonstrated its action are, in order of frequency,—the skin, the mucous membranes and their glands, the lungs, the kidneys, the liver, the pancreas, the brain, the lymphatic glands, the articulations, the spleen, the pericardium, the spinal membranes, and the heart. The skin has presented almost all the alterations described by dermatologists. A more or less deep injection of the mucous membranes has been observed, but seldom any softening. The membranes most often affected have been those of the nose, mouth, eyes, and bronchi. The glands have been found hypertrophied and even ulcerated, but this latter lesion has been especially met with in the tubular glands of the rectum. The pulmonary lesions are congestion and splenization, with or without apoplectic effusions. The renal lesions have varied from a simple congestion of the cortical substance to the changes characteristic of Bright's disease. The liver has been found several times congested, and once in a state of fatty degeneration. In the pancreas there has been observed only a more or less extensive injection of its surface. In the brain, only a small portion of the grey substance has been found injected as well as its surface. In many instances there has been found cancerous and tuberculous degeneration of the lymphatic glands, while in others they have been only engorged. In the joints there have been found an increase in the quantity of synovia, a much deeper colour of the cartilages than in the normal state, and injection of the synovial membrane; but deposits of urate of soda have not been met with. Lesions

of the spleen have been rare, and consisted in a slight injection at its edges and a somewhat deep coloration at some points. In one case the spinal membranes and the pericardium have been found much injected, and in one of the eight instances experimented upon the walls of the heart were found enormously thickened."

Art. 70.—*On Disseminated Suppuration of the Kidney, Secondary to Certain Conditions of Urinary Disturbance.**

By W. H. Dickinson, M.D. Cantab., F.R.C.P., Senior Assistant-Physician and Lecturer on Pathology at St. George's Hospital, Physician to the Hospital for Sick Children, &c.

(*The Lancet*, March 8.)

In this paper the author proceeds to describe the peculiar suppurative condition which is sometimes spoken of as the "surgical kidney," and is produced, as he shows, by the contact of unhealthy urine. Of all renal disorders, next to those described by Bright, it is the most destructive to life. It may almost be said to form the natural termination of stricture of the urethra, and is the especial danger which attends the use of the catheter and lithotrite.

The renal change which is always associated with signs of pelvic and vesical inflammation, and often with alterations of the gland dependent on wasting, pressure, and chronic vascular disturbance, essentially consists of a peculiar turgidity and friability of the renal structure, with the formation of small scattered abscesses, or soft yellow deposits antecedent to abscesses, throughout its structure. With these are usually seen conspicuous white lines in the cones, which are morbidly occupied straight tubes.

With this condition the microscope shows more or less dilatation of the straight tubes, distension of, or coagulation within, the blood-vessels associated with them, and disseminated intertubular suppuration, the distribution of which is regulated by the course of the veins. (The microscopic appearances were illustrated by drawings which show the dilatation of the straight tubes; the irregular repletion of, or coagulation within, the vessels of the cones and the larger veins of the cortex; and the origination of abscesses around the affected vessels and throughout limited tracts of the intertubular tissues. The swelling of the intertubular tissue where thus infiltrated by the new cellular formation was strikingly depicted in contrast with the slender network presented by the same structure in a part of the gland exempt from the change.)

Taking the structural changes in their mutual relation, the usual dilatation of the tubular exits, the morbid occupation of the veins, and the general absence of tubal inflammation, the nature of the process is clear. The disorder has its origin in the regurgitation of urine charged

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* Read at a Meeting of the Royal Medical and Chirurgical Society, February 25th.

with morbific products. This occupies and generally distends the straight ducts, and thence enters the neighbouring blood-vessels, and charges them with an infection resembling in its results that of pyæmia. This is distributed by the veins to the rest of the gland, sowing abscesses in their course, and ultimately causing constitutional symptoms analogous to that of pyæmia when otherwise derived.

The urine being obviously either the source or the vehicle of the morbific matter, it remains to inquire whence and in what circumstances it becomes thus contaminated. To help in answering these questions the author has collected the particulars of 69 cases from the post-mortem books of St. George's Hospital. The disorder was traced to mechanical obstacles, to the escape of urine (stricture or enlarged prostate) in 31 cases; to paralysis of the bladder in 17; to stone in the bladder or operation for its removal in 15; to cystitis from other causes in 5; and in 1 to a renal calculus complicated with enlargement of the prostate. Looking at the urine as directly connected with the origin of the disease, it appears that three conditions usually concur—retention, ammoniacal decomposition, and admixture with the products of mucous inflammation. Of these, ammoniacal decomposition appears to be essential, or at least to be constantly present. The urine is also generally fetid, and more or less mixed with vesical products, pus, mucus, and blood. The ammoniacal change, although possibly arising independently of mucous inflammation, produces it so constantly that the origin of the disease is always thus complicated. The clinical antecedents to this condition are fundamentally of two kinds—those which begin with retention, and those which begin with cystitis; both in the end producing an ammoniacal and putrescent state of urine. Mechanical obstacles and loss of expulsive power, belonging to the first and larger class, occasion the retention and subsequent decomposition of urine, and its consequent admixture with the products of mucous inflammation. Stone and other vesical irritants, belonging to the second class, begin by causing morbid vesical discharges, which render the urine prone to decomposition, and ultimately induce in it a putrescent condition, not altogether dissimilar to that which springs from retention. The rarity of the renal disease as a consequence of stone in the kidney is probably to be explained by the less putrefactive tendency of the discharges from the pelvic membrane, or of the urine in that cavity.

In cases otherwise so tending, catheterization, lithotrity, or some such instrumental proceeding, seems sometimes to act as the immediate instigator of the morbid process, as is witnessed by the common phrase which stigmatizes the disease as the "surgical kidney." The disorder, however, may arise independently of any surgical intervention, and would perhaps be better distinguished by the term *uriseptic*, which would declare its general clinical relations more comprehensively.

Having regard to recent researches which have associated the lower kinds of organic life with pyæmia, it is worth noting that the condition of urine which causes the disease now in question is one in which vibriones and bacteria abound. From this, however, no inference as to the nature of the virus can be safely drawn, except that it is associated with decomposition.

Passing to the symptoms of the disease, they have a general re-

semblance to those of pyæmia, being those of blood-poisoning rather than of renal inflammation. Unlike what happens with pyæmia, organs other than the kidney appear seldom to share in the suppurative process. The complaint usually ends fatally within three weeks of the first symptom, though there is evidence that recovery sometimes occurs. Peri-renal suppuration is an occasional result.

In treatment our efforts must be directed chiefly to prevention, to which end, beyond cautious surgery, measures of two kinds suggest themselves. First, the preservation or restoration of the natural acidity of the urine, a matter of most difficulty where it is most needed; secondly, as a suggestion as yet unwarranted by experience, the introduction of antiseptics by injection into the bladder.

To sum up: the form of renal suppuration which may be termed uriseptic has its origin in ammoniacal and putrid urine, poison from which is conveyed by the veins into the substance of the kidney, and thence infects the system, causing symptoms in some respects resembling those of pyæmia. As this form of disease is little obedient to curative medicine, though not necessarily fatal, our efforts must be directed towards the correction of the state of urine from which it springs.

Art. 71.—*Case of Diabetes Insipidus treated with Valerian.*

By John B. Bradbury, M.D., Physician to Addenbrooke's Hospital, Cambridge.

(*The Lancet*, January 11.)

Dr. Bradbury reports a case which bears additional testimony to the successful treatment of diabetes insipidus by valerian, a remedy that was first recommended by Trousseau. On admission (September 1st) the patient was passing sixteen and a half pints of urine daily, and his weight was 9st. 5½lb. He commenced to take the powdered valerian on the 5th of September, in fifteen grain doses, three times a day. On the 11th the dose was increased to twenty grains, and on the 1st of October these were repeated five times a day, beyond which he could not take them without feeling sick. On the 3rd of December his weight had increased to 10st. 10lbs., though the medicine had been gradually left off, and he only passed three pints of urine a day. He continued to improve even after his discharge from the hospital.

Art. 72.—*Renal Calculus, Gravel, and Gouty Deposits, and the Value of Lithium Salts in their Treatment.*

By A. B. Garrod, M.D., F.R.S., Physician to King's College Hospital.

(*Medical Times and Gazette*, January 25.)

Dr. Garrod remarks, that thirteen years have now elapsed since the salts of lithium were introduced into medical practice as internal reme-

dies; and for a period of nine years both the carbonate and citrate of the metal have been made officinal by being placed in the British Pharmacopœia; sufficient time has therefore elapsed for their value as medicinal agents to have been fairly established. Having introduced the lithium salts to the notice of the Profession, and having had considerable experience of their action upon the system and therapeutic value, he considers himself in a position to give some opinion upon their merits.

It may perhaps be of advantage, especially to those readers whose attention has not been directed to the subject, to point out some of the peculiarities of the salts of lithium, in order that their action and value may be more readily understood.

In the first place, it may be stated that the oxide of lithium, as likewise the neutral carbonate, are strongly alkaline, resembling in this respect the salts of sodium and potassium, and hence the oxide of this metal is generally regarded as the third fixed alkali. Lithium is a metal far less commonly diffused than either sodium or potassium, and it received its name from its being supposed to exist only in a few minerals, and not either in the animal or vegetable kingdoms.

The distribution of the metal is, however, much more extensive than was at first supposed, and it is now capable of being detected, by the method of spectrum analysis, in the ashes of many vegetables, and in that of the blood itself, and likewise in many mineral waters. Minerals called triphylline, lepidolite, spodumene, and lithia mica contain it in quantities sufficient to render the extraction of the metal profitable.

The salts of lithium commonly employed are the carbonate and citrate; occasionally he makes use of a guaiacate of lithium for special purposes.

The properties of lithium salts, to which attention may be now advantageously directed, are—

1. *Their Alkaline Properties.*—The carbonate of lithium, although very sparingly soluble in water, forms a solution with a strong alkaline reaction. The corresponding salts of sodium and potassium are much more soluble.

The amount of alkalinity of the three salts, or their neutralizing power for acids, differs greatly. The carbonate of lithium has the greatest amount of neutralizing power; next comes the carbonate of sodium; and lastly the carbonate of potassium. This difference depends on the equivalent of the respective metals, that of lithium being 7, of sodium 23, and of potassium 39; the lower the equivalent the greater the neutralizing power of the carbonate.

When in practice we administer these salts as direct antacid remedies—that is, for the purpose of arresting acidity in the stomach and intestines we may consider their power to be in the inverse order of the equivalents of the salts. When the citrate of lithium is given, although it is difficult to state where the decomposition takes place, we know that we find it in the urine as carbonate; and hence, although the salt possesses no direct antacid power, still it is equally antacid, as far as the urine is concerned, to the carbonate, when the amount of lithium in each salt is taken into consideration. Looked upon simply as either direct or remote antacid remedies, the salts of lithium possess no known roperties which render them in any degree more eligible than the salts

of potassium and sodium; and there are other considerations which render them less desirable, especially their high price.

2. *Action of Lithium Salts as Diuretics.*—If we examine the powers of the salts of lithium, sodium, and potassium, as regards their action upon the kidneys, we find, as far as their diuretic power is concerned, lithium stands by far the highest; sodium the lowest; potassium being intermediate. The power of lithium salts in increasing the urinary secretion in many cases is extremely marked; and some patients to whom these preparations are given for other purposes than as diuretics, find it often inconvenient to take them in the latter part of the day, on account of the diuretic effects during the night.

3. *Peculiarities of Urate of Lithium.*—A very important characteristic of lithium as a medicinal agent, is the solubility of the salt which it forms with uric or lithic acid, the urate or lithate of lithium being by far the most soluble salt of the acid which is known; in fact, it is the only salt of uric acid which can be looked upon as soluble to any great degree. As the inconveniences which uric acid or its salts cause in the system depend on their very sparing solubility, leading to the formation of calculi, gravel, or gouty deposits, it can be readily understood that an agent possessing the powers of lithium would be likely to prove of considerable advantage in many diseases in which uric acid plays an important part. Although the exact solubility of the different salts of uric acid has not as yet been very carefully determined, yet there is no difficulty in showing the great solvent power of carbonate of lithium, compared with the corresponding salts of sodium and potassium. It has, for instance, been found that the mineral lepidolite, in fine powder, when boiled with uric acid, has the lithium extracted from the silicic acid contained in it, and the urate of lithia formed. Again, when carbonate of lithia is boiled in a quantity of water insufficient for its solution, the addition of uric acid renders it soluble, proving that the urate is more soluble than the carbonate of the metal. To further illustrate the subject, it will be found, if we add to solutions of equal strengths of the three alkaline carbonates, at the temperature of the body, uric acid in the form of uric calculi, or in any other shape, that the lithium solution attacks it rapidly; the sodium solutions very slowly and to a small extent; the potassium salts in an intermediate degree.

To sum up, we may remark that lithium salts as simply antacid remedies offer no special advantages; that as diuretics they may, in cases in which saline diuretics are indicated, prove of much service; but that as agents to prevent the deposition of uric acid or its salts in the cavities or tissues of the body, they possess properties which may render them important medicinal agents.

Art. 73.—*The Solvent Treatment of Calculi.*

By John C. Murray, M.D.

(*The Lancet*, February 1.)

Hitherto this mode of treatment of calculi has not, Dr. Murray writes, had a fair chance. We have long given dilute mineral acids for phos-

phatic and alkalies for uric acid deposits; we have also tried solution of vesical calculi by weak acid or alkaline injections, but after a short trial have too often become discouraged by apparent want of efficacy in the means employed; or the patient, being relieved, has become tired of the prolonged treatment, and after a period of comparative ease has ultimately had to submit to an operation, and thus solvent remedies have, undeservedly, met with but scant justice.

In the first place, the author does not think that the primary cause of gravel or calculi is often resident in the urinary system; the original cause is probably attributable to the teeth, stomach, duodenum, liver, and pancreas; much animal food and a too active digestion, with insufficient exercise, will render the blood too acid; while impure air, imperfect digestion, and consequent mal-assimilation of food is apt to cause the blood to be neutral or even alkaline. According to the reaction of the blood, so will be that of the urine. If the blood be excessively alkaline, acid urine will not be secreted from it; if neutral or acid, the urine will be acid unless changed by vesical disease.

Again, he does not attribute the apparent failure of solvent agents to want of power to effect the desired end. In hard-water districts, as was first clearly shown by Dr. Harley, and hinted at by many other writers, the drinking-water has a much greater effect upon the character of the urine than has hitherto been recognised, and in certain constitutions will cause deposits in the urine. In these cases it is vain to expect benefit from solvents, while the patient continues to use for his food and drink the same water to which he has been accustomed; for the daily amount of earthy salts is often sufficient to neutralize the mineral acids taken, and thus only prevents the patient from becoming worse without effecting a cure.

Dr. Murray, therefore, suggests that the solvent method be properly tested in one or more large hospitals. Let a certain number of patients be put under an acid or alkaline course of treatment, according to the kind of gravel or calculi, and let them have only distilled water in all their food and drink; let the treatment be continued sufficiently long, watching carefully the result, and the value of solvent remedies would soon receive a solution.

Since the beginning of April, 1872, he has confined calculus patients to the use of distilled or soft water, and has found the solvent plan effectual when so assisted, although very tantalizing before. After using distilled water, it is quite a common event for a calculus patient to pass one or more water-worn calculi after the second month of treatment.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 74.—*Lectures on Dermatology.*

By Professor ERASMUS WILSON, F.R.S., F.R.C.S.

(*The Lancet*, February 8 and 15; March 8 and 22.)

On Friday, the 31st January, Professor Wilson commenced his fourth course of lectures on dermatology. The early portion of the first

lecture was devoted to a short retrospect of previous lectures, and the latter to a description of the additions to the dermatological collection since the last session. The models, numbering a couple of dozen, made by Baretta, are of similar excellence to those already in the museum, and represented papular and vesicular scabies, lichen planus, papular erythema, urticaria, and various manifestations of cutaneous syphilis. Those who will take the trouble to examine these models carefully will observe that the College Professor has differed in his diagnosis from that of his French colleagues under whose care the original cases from which the models have been made were, and he has in several instances given fresh names in accordance with his new diagnoses. We must say we completely agree with Mr. Wilson. The model, regarded as an illustration of pityriasis rubra, is, in reality, one of lichen planus (Wilson), or lichen ruber of Hebra, and we are at a loss to understand how it came about that the physicians of the famous Hôpital St. Louis made such a blunder, unless it be that lichen planus does not occur (which we doubt) or is rare in France. One of the models, named *plaque syphilitique* by the French, simply illustrates a congeries of syphilitic tubercles in circular disposition. Another labelled by them non-syphilitic psoriasis is syphilitic; and lastly, another styled lupus is clearly syphilitic in all its characters. These and other of the original designations of the models in the collection, as we have before pointed out, do not enhance our respect for the present state of dermatological science in France. We think it is a good deal behindhand, and is specially lacking in regard of pathological considerations, and its professors know apparently little of the labours of foreign writers. Mr. Wilson mentioned, in speaking of the utility of these models in the whole collection, that they would materially assist the learner in making himself acquainted with the anatomical characters of cutaneous diseases, and that speedily, as most phases of the different skin diseases were brought under his notice by them at one time. Syphilis, for example, was illustrated by no less than eighty models. These models, further, would be of great use in refreshing the memory of those who had already studied skin diseases, but had become rusty, at the same time that they enabled the worker or observer to become acquainted with the features of the rarer forms of skin disease. Of course Mr. Wilson does not mean that skin disease can be *best* learnt in museums, since so much is to be learnt by touch, and actual observation in other respects upon the living subject, and in regard of diagnosis by taking into consideration the history, concomitants, the temperament, general aspect, and other appertainings of the patient. But still such an excellent collection as that now brought together in the College gives the learner at once facts about, and aspects of, disease that he would have to wait for a long time in practice or in hospital.

LECTURES II. AND III.

These two lectures were devoted to an historical and descriptive account of leprosy; its varieties, its cause, pathology, and diagnosis; and a number of models and drawings were used in illustration of the various points brought under notice. Mr. Wilson adopted the usual division of the disease into Elephantiasis tuberculosa, and E. anæsthetica, and

spoke of it as having first an erythematous, then a tubercular, and last, an ulcerative and a degenerative stage, being in these respects analogous in its course and features as regards changes in the skin to syphilis; and whereas, in the tubercular form, the disease spends itself on the skin chiefly, in the anæsthetic form the nervous system is peculiarly implicated, and nodosities are found upon the trunks of the superficially placed nerves. The meaning of the terms leontiasis, indicating the lion-like aspect of the face, of satyriasis, and the like, was briefly explained, as also that of elephantiasis mutilans—a term applied to leprosy when enucleation of the bones occurs. After speaking in detail of the disordered sensations, the alterations of pigmentation, the change of disposition to one taciturn and moody, in lepers, Mr. Wilson proceeded in his third lecture to discuss the cause. This he affirmed to be a special poison engendered by climatic influences. A predisposition to the disease was engendered by debility, from whatever cause this might arise; the debility favouring the operation of causes which, under other conditions, might not cause the disease. The Professor expressed the opinion that, in its endemic haunts, a special poison may be exhaled from the leper which might convey infection to others, and he thought that the disease might possibly be given to a child from a nurse through the lung exhalations, or through the breast-milk. He thought that, in the case of physicians long resident in leper asylums who became attacked by the disease, the occurrence of the latter was to be attributed to their constantly breathing the air infected by exhalations given off by the leprous. Danielssen and Boeck had stated that the disease was not contagious, and this was probably the case in the northern districts, where they made their researches; but the case was different in other localities. It is more contagious, the Professor thought, in some parts of India than others—viz., along the Malabar coast, at the Mauritius, and at Madagascar. A case was related in which the disease appeared to be taken together with syphilis. Whilst, however, the disease was contagious, it spread in the majority of cases by hereditary transmission. Mr. Wilson then referred at length to the history of leprosy in Surinam, as given in the work of Dr. Drognat Landré, and also to Dr. Hillebrand's account of the spread of leprosy in Honolulu, where the disease was supposed to be introduced by the Chinese, in illustration of the contagiousness of leprosy. In these two places it is asserted that leprosy has spread by contagion. Mr. Wilson guarded himself by saying finally that the disease was not contagious in the absence of favouring conditions of climate.

The pathological manifestations in the disease were stated to consist in the development of a cachexia associated with a colloid metamorphosis infiltrating the tissues and leading to their ultimate destruction. The colloid material is made up of minute cells having in some cases the characters of colloid spherules. The infiltration of the skin by this material leads to obliteration of the papillary layer, the formation of tubercular masses in the skin destroying the corium and connected structures, including vessels and nerves. The neurilemma of the nerves in various parts is infiltrated with the new material, which envelopes the nerves, separating at first the tubules, and leading presently to their atrophy. Besides these changes, anæmia, local congestions, pigmenta-

tions in the skin, mutilations, and the like exist. Mr. Wilson here exhibited a series of most admirable drawings from life, made by Dr. Vandyke Carter, showing the appearances presented by the eruptive manifestations, especially the "barras" of anæsthetic leprosy, the deformity of the hand in anæsthetic leprosy, the changes seen in the nerve-trunks (median and ulnar) and muscles of the arm upon dissection, the minute appearances seen in the nerves upon microscopical examination, together with the microscopic characters of the leprous neoplasm, and he paid a well-merited compliment to the zeal and success with which Dr. Vandyke Carter has pursued his investigations. It is to be hoped that Dr. Carter's drawings and facts will be published, since they would constitute a most valuable addition to our present knowledge of leprosy.

Mr. Wilson gave as the duration of tubercular leprosy ten to fifteen years; of the anæsthetic, fifteen to twenty years. The treatment, he observed, consisted first of all in hygienic means, such as removal from a climate where leprosy exists, due exercise, good food, exhilarating society and occupation, the use of baths and the observance of cleanliness, together with nutritious food. Medicines failed to do any special good, yet ordinary tonics—quinine, arsenic, iron, cod-liver oil, and the mineral acids—were to be commended as improving the general health. Drs. Danielssen and Boeck's suggestions and some other recommendations were passed in review, and this brought the lecture to a close.

LECTURE IV.

The Beauperthuy treatment of leprosy formed the subject of the early part of this lecture. This system consists of three parts—1st, hygienic; 2nd, external applications to the diseased parts; 3rd, internal medicines. The hygienic treatment, which is absolutely essential, and without which nothing but the most temporary improvement can be attained, consists of pure air, nourishing food, including a moderate quantity of fresh meat daily, abstinence from all salted meat or fish, and from pork, whether salt or fresh; a sufficient quantity of fresh vegetables must be given, and if the patients are habituated to its use, a moderate quantity of light wine may be given, but this is not necessary. The external applications consist of soap and water baths twice a day, and frictions over the whole of the skin with oil. Cocoa-nut oil is always used at Trinidad and Cumana, but olive oil might be employed if more convenient. The oil is well rubbed in and allowed to remain on for three or four hours, when the body is thoroughly cleansed by a soap and water bath. Oil of cashew-nut is applied to the tubercular formations by means of a small piece of sponge. This application is made at first only over a small portion of the skin, as large, for instance, as the hand, and when the effect of the first application is seen subsequent ones may be made larger if deemed advisable. The effect of the oil is to produce, after from twelve to twenty-four hours, vesication. The skin should, if possible, not be broken, and the exudation should be allowed to remain and dry on, so as to form a crust. In about ten or twelve days this will fall off, leaving the skin clear and free from any ulceration underneath. If the parts are numbed, but not completely anæsthetic, sensibility will in general be completely restored by the first application; if the anæsthesia is complete it may require two or three applications to restore it. The

applications should not succeed each other at intervals of less than a week. Where the feet are affected, as it is not convenient to use the cashew-nut oil for them, baths of hot cocoa-nut oil may be used night and morning. These must be superintended by a skilled attendant, who tests the heat with a thermometer, as the patient's sensibility will generally be either deficient or null, and if trusted to him he might scald the feet without knowing it. The heat should not exceed 100° Fahr. The internal medicines administered by Dr. Beauperthuy are perchloride of mercury (Ph. Br.), in doses of one-fifteenth to one-twentieth of a grain twice a day for adults. In cases where mercury is contra-indicated Dr. Beauperthuy gives carbonate of soda, in doses of ten grains to a scruple, twice a day. The treatment may be interrupted or modified if any complications occur. Should the mercurial affect the mouth, or cause any irritation of the intestinal tract, it should be discontinued, and the alkali given.

Mr. Wilson proceeded to remark that the local treatment by the cashew oil led to an exudative process which did not act merely locally, but performed the office of a general emunctory for the system at large, and represented the discharging ulcers that are known to exert a beneficial action in lepers, by apparently carrying off *materies morbi* from the body. Dr. Milroy, the lecturer stated, had informed him that the weak part of the Beauperthuy treatment is the long administration of mercury, and he opined that this retarded rather than promoted amendment in the health of lepers. The prospects, however, of preventive were more hopeful than those of curative measures in leprosy, and from all he (Dr. Milroy) had seen and heard, he had derived the conviction that leprosy is a constitutional cachexia of the whole frame (a *morbus totius corporis*), having analogies to scrofula. The fact, too, that the term king's evil was given to the disease in the West Indies lent countenance to this view. Great credit, Dr. Milroy thought, is due to Dr. Beauperthuy, since he was the first to grapple with the subject of the treatment of leprosy, and in that he did not cease till his efforts had forced the matter upon public attention, and was perhaps the first to emphasize the necessity of prescribing a good diet for lepers, a statement to which Mr. Wilson took exception, Dr. Beauperthuy not having any claim to be considered the "inventor of good living" for the leprous, though Mr. Wilson allowed he laid great stress upon it. The Beauperthuy treatment, Dr. Milroy further stated, could not be regarded as one of mere medicinal measures, but one of diet and hygiene also. On the whole, according to his experience, the results of the inquiries led him to regard the treatment of leprosy as offering encouragement. In many cases the disease could be checked, and in many actually lessened; to talk, however, of a cure or perfect recovery in any instance would be, in Dr. Milroy's opinion, a misuse of language. Mr. Wilson concluded, in regard of the treatment of leprosy, that Dr. Milroy had not brought home from his mission any very satisfactory guide to actual therapeutics.

Lastly, in connexion with the treatment of lepers, Mr. Wilson advocated the establishment in England of a leper asylum for the proper care and management of the leprous. Considering how much supervision they need in the way of appropriate hygiene, in the regulation of diet and exercise, in the use of proper baths, frictions and manipulations of

various kinds, in regard to the inunction of oils and the administration of internal and external remedies, he did not think it too much to say that this could alone be fairly carried out in a proper institution, and the knowledge necessary to the discovery of the more successful treatment of leprosy could only be acquired in such an institution.

LECTURES V. AND VI.

The two concluding lectures of the series were devoted to a particular account of psoriasis, its nature and treatment. Mr. Wilson first entered upon an examination of the exact meaning of the words psoriasis and lepra. He applies the term lepra to the disease which is designated psoriasis by almost all dermatologists. The term psoriasis he believes would be more fitly employed to designate chronic eczema in the squamous stage. Mr. Wilson stated that he could only accept the more common use of the word psoriasis under protest, and shall always say that the lepra of the Greeks is the disease to which the designation psoriasis is now generally applied. The Professor next described in detail the varieties of psoriasis, and then proceeded to indicate the cause of the disease as an "inherited inherent debility" of nutrition, which must be removed by appropriate treatment if a cure is to be effected. Where there was no recuperative power in the organization the hopes of cure could only be small. The disease, Mr. Wilson affirmed, was less common amongst the manufacturing classes, who might be regarded as being more hardy and robust as a consequence of the invigorating character of their work. In the treatment of lepra Mr. Wilson said it was necessary to secure three objects:—(1) The neutralization of the predisposition to the disease, and to alter the diathesis of the patient; (2) to remove the local effects of the disease; and (3) to aim at fortifying the constitution.

The first point was to be gained by securing to the patient the advantage of good air and diet, of bathing and exercise. As regards diet Mr. Wilson advised three meals, each equal in nutritive capacity, in the day.

For the removal of the eruption soap and water might be freely used, so as to remove the scales and stimulate the congested skin to healthy action. A soap and water bath was often efficacious. In certain situations—about the limbs and trunk, for instance—the use of water-dressing might be had recourse to. The wet dressings could be worn at night and repeated daily till the scales ceased to form. Soaking in the hip or long bath might be employed for a like purpose. In an institution perfectly equipped with bath appliances the scales would soon be got rid of, but in private practice it was impossible to arrive at the same results all at once. If after a few days a patient returned to Mr. Wilson with scales still adherent, he was told that he had neglected to carry out the directions, and was advised "to keep down the scales by every possible means." But the wet-packing was not applicable to all cases of psoriasis: it sometimes irritated the parts. In some cases, where the scaliness was very excessive, pumice-stone might be used to remove it. When the scales are removed the patches should be thoroughly rubbed with some form of tar, by the aid of a piece of flannel. The amount of tar required is small, but it should be infricted to procure its absorption. Mr. Wilson believes that the tar has not only action upon the

skin, but a general action upon the system. Three kinds of tar were mentioned: the Pix liquida, juniper tar, and Barbadoes tar, and Mr. Wilson declared their action to be similar, the least offensive for internal administration being the last-named. The tar might be used locally in an undiluted form, or mixed with benzoated lard, or in the form of unguentum picis, and with potash where it is desirable to soften up indurated scaly patches. Mr. Wilson stated that the eruption yields most readily to treatment in the scalp and face. He did not specify the host of other remedies in vogue, save the unguentum hydrargyri ammoniatum. In regard to inflammatory leprosy, he believes the best local application is the benzoated zinc ointment.

The third indication was to fortify the constitution by attention to ordinary hygienic and dietic principles, and then to administer arsenic, the specific for the disease, which acted as a nutritive tonic. Mr. Wilson mentioned that copaiba had failed in his hands to prove efficacious. Bichloride of mercury was also useful in some cases. In administering arsenic Mr. Wilson remarked that the dose of the vehicle in which the arsenic is given should be as small and as pleasant as possible, and the medicine should be given with or at the end of a meal. After mentioning the poisonous effects of arsenic, and declaring that he had never seen any ill-effects, but only the best results, from the use of arsenic, Mr. Wilson concluded his course with an expression of thanks to his audience for the attention with which they had heard him.

Art. 75.—*Lectures on Leprosy.*

By Robert Liveing, M.D., Gulstonian Lecturer at the Royal College of Physicians.

(*The Lancet*, March 22.)

Dr. Liveing commenced by stating that he found it impossible in the three lectures which he should deliver to do more than give a slight sketch of the history, geographical distribution, etiology, and pathology of leprosy. After affirming that the disease was clinically divisible into three chief forms, the macular, the anæsthetic, and the tuberculated, Dr. Liveing referred to the confusion which existed in the use of the terms elephantiasis and lepra by the Greek and Arabian writers, and pointed out that elephantiasis Græcorum was equivalent to lepra Arabum or true leprosy; that elephantiasis Arabum was the same disease as the Barbadoes leg, and that the lepra Græcorum was the psoriasis of moderns. He opined that amongst the Jews and in the account given of leprosy in Leviticus, several distinct diseases were classed under one general name—such, for example, as eczema, psoriasis, scabies, and, possibly, syphilis; or at least these were not distinguished the one from the other in their earliest stages. Some of these maladies were deemed contagious, and the isolation of the lepers was not merely a religious rite but a practical piece of hygiene.

Dr. Liveing next referred to the spread of leprosy in Europe, especially in the Middle Ages, and particularly to the way in which the seclusion of lepers operated in exterminating the disease. He averred that the

disease did not diminish in consequence of the prevention of its spread by contagion, but of the intermarriage of the lepers with the healthy. The horror with which the disease was regarded, and its known hereditary tendency, effectually shut out the lepers from society; so that they died out by degrees. The introduction of lepers into Western Europe in the Middle Ages has been attributed to the influence of the Crusades, but the disease was known in Spain, France, and England before the time of the Crusades. There were leper houses in Germany in the eighth century, and in England in William the Conqueror's time. Three things tended to support the idea that leprosy was introduced by the Crusaders in the Middle Ages. First, the disease rapidly increased about the time of the Crusades, and to those who believed in the contagion of leprosy, this spread appeared to be due to its operation. Secondly, the Crusades gave an impetus to the founding of hospitals. Thirdly, distinguished physicians of the West began to study the disease more and more. These three circumstances contributed to bring the disease into greater public notice, and gave it the appearance, in the eyes of historians, of having been largely introduced into the West.

Dr. Liveing proceeded by the aid of maps to indicate the position of the chief leper asylums in the British isles; from an examination of which it appeared that the majority were found in the east and south coast counties, and the towns on some of the larger rivers, especially the Thames, Severn, and Ouse. At first sight it would appear that the distribution of these lazar-houses affords a pretty fair indication of the relative prevalence of the disease in various parts of the kingdom; but it may be that the provision of so many hospitals was to be explained by the fact that these parts were the chief centres of civilization at the time, and nearest the Continent, the disease not having been in reality more prevalent there.

The treatment of lepers in the Middle Ages was the next point to which Dr. Liveing referred. He then dealt with the question of the decline of leprosy. The disease did not arrive at its maximum of prevalence in all countries of Europe at the same time. It was most prevalent in France and England towards the end of the thirteenth century, and somewhat later in Germany. It rapidly disappeared about the end of the fourteenth century from Europe, but lingered till the middle of the eighteenth.

The history of leprosy in the Middle Ages in Europe suggests several interesting questions:—1. How did it become common in Europe? 2. Was it at all contagious? 3. Did the mode of life of people at that time influence its progress? 4. Did the isolation of lepers help to check its extension? In regard to the first query, the records of the twelfth century show that it exhibited a sudden accession of strength, and spread from north to south, and subsided in like order. In its retreat it left behind foci of disease under favouring circumstances—in fact, there was an *epidemic* increase of a disease before *endemic*. With regard to the second query, it would appear that though not contagious, many of the Crusaders acquired the disease in the East, and transmitted it hereditarily at home. With regard to the third question, no reliable answer can be given, for the writers of the Middle Ages held very absurd notions as to the causes of disease, and all and every kind of food in

turn was condemned by one or another. With regard to the fourth question, Dr. Liveing stated his belief that the isolation of lepers tended to check the transmission of the disease hereditarily by preventing marriages with the leprous.

In his second lecture Dr. Liveing sketched the geographical distribution of leprosy at the present day in particular countries, in relation to the external circumstances of the climate, soil, and the occupations of the inhabitants of those countries or districts, and other points connected with the etiology of the disease.

In speaking of Norway, Dr. Liveing pointed out that during the last thirty years the number of lepers had quadrupled. On the west coast of Norway the people lived upon bad food, both animal and vegetable, bad fish, sour milk, rancid butter, filthy cheese, unwholesome bread, and the like. The corn they used was cut green, and the grain itself was poor and musty. The occupation of those in the leprous districts was that of fishers. In Sweden leprosy was once common; but when the herring shoals left its coast and went to the Bergen shore, leprosy lessened in extent, and coincidently with an increase in agricultural pursuits and cultivation of the land. In Faroe and Iceland similar results have occurred in regard to the disease. On the shores of the Baltic, and in parts of Russia, conditions answering to those of the Norwegians amongst whom leprosy prevails, are found. In the Mediterranean district leprosy is endemic, especially in Crete. The Cretans and the Norwegians are alike in regard to the character of their diet, the food of the former consisting of bad salt fish, rancid olive oil, bad bread, bad water, and the like; whilst the climate of Crete, unlike that of Norway, is semi-tropical. Dr. Liveing, in passing, remarked that the rigid bye-laws enforced in some parts to secure the exclusion of the lepers in the countries referred to have failed to check the spread of the disease so long as lepers have married: and in all the cases now referred to climate *per se* has had little effect upon the disease.

Dr. Liveing then referred to Africa, where leprosy is to be found on the coasts; to the Cape of Good Hope, where it exists as an imported disease amongst the imported races, and not amongst the aborigines, and in connexion with a splendid climate; to Brazil, where the disease is rare on the coast, but exists in the interior; to Central America, where the disease is to be found amongst the descendants of the Spanish emigrants, and fish is seldom eaten by the infected; to Mexico, where it exists in the high inland plateaux, and not along the coast; to New Zealand, where the people consume putrid maize or potatoes; to certain islands where the people live upon a fish diet and bad bread, and the inhabitants are fishers and poverty-stricken; and to India, where leprosy is not equally common in all parts or among all castes, but where lepers abound in greater numbers in rural districts, where the disease is more common on the coasts, rare in dry and well-drained and cultivated districts, where it is found that elevation *per se* has little effect on the prevalence of the disease, and where the low caste Hindoos and Mussulmans are most affected. Dr. Liveing's object was to show that leprosy prevailed in countries possessing every variety of climate and people, and that climate *per se* has little effect upon the disease, and especially on its causation.

Dr. Liveing next proceeded to deal with the etiology of leprosy. Of the primary cause nothing was known, and he could only deal with secondary causes, including climate, soil, race, deficient hygiene, diet, hereditary tendency, and contagion. These varied in the degree to which they severally operated. As regards soil, it was evident that the disease exists mostly along seaboards and in marshy districts. India appeared to offer an exception, but still the disease on the whole is more common in that country along the sea coast. Dr. Liveing pointed out that the development of agriculture and drainage operations constituted, as it appeared, the great preventive of leprosy, and these were carried on more in inland parts than on seaboards, which explained perhaps the difference in the prevalence of leprosy on sea coasts and in inland parts; hence district *per se* had little influence upon the disease. As regards race it was difficult to form an opinion, because other factors came into operation in connexion with that of race, such as mode of life, occupation, and the like. As regards hygiene, it was doubtful if that had any very special influence, but probably bad dwellings, uncleanliness, and bad clothing favoured the development of the disease. As regards diet, it appeared that one of the most common kinds of food taken by the leprous was bad fish, and Dr. Liveing referred to the views of Mr. Hutchinson and others upon this point, but he concluded that the question to determine was not so much whether eating bad fish *per se* caused leprosy, but whether some special element in the diet of lepers, of which fish formed a chief part, did not exist to operate as a special cause of leprosy, just as the active principle of Lathyrus sativus produces paraplegia, or ergot ergotism. It is true that people who live in districts where leprosy is common eat much fish, but so do those who live in districts where intermittent fever is common. Dr. Liveing thought that probably any decomposing food taken constantly and in large amount might cause leprosy, and as decomposing fish is an article consumed largely by those who become leprous, it had been specially credited with causing the disease.

In the early part of the third lecture Dr. Liveing continued his examination of the predisposing causes of leprosy. He fully allowed the influence of hereditary peculiarity in the genesis of the disease, as shown by the statistics of Danielssen, Boeck, and others. The disease was mostly confined to certain families where it occurs endemically in small districts, and it exists in an inverse proportion to the degree in which civilization had influenced the attacked communities; and those were mostly infected who were isolated by special local barriers, by caste, and other similarly operating conditions, among which free intermarriage would of course be most common. Dr. Liveing believed that the hereditary character of the disease was not of the same perfect kind as in syphilis, but it partook rather of the nature of a predisposition needing the operation of external circumstances to cause it to issue in the development of the disease, as in cancer and phthisis. In regard to the question of contagion, Dr. Liveing agreed generally with the conclusions of the Leprosy Committee of the College; but he mentioned in detail certain occurrences in Norway in which it was supposed that the disease had been conveyed from person to person by the acarus, and referred especially to the case of a family, four of the members of which were

presumed to be infected in this way; but he concluded that the facts only admitted the inference that four members of one family became lepers in a place where leprosy is endemic. He then stated that there is the strongest ground for the belief that the disease in South America and other districts is an importation, and is spreading amongst the aborigines under conditions which do not admit of the possibility of hereditary transmission having operated as a factor in the production of the spreading disease; and he referred to the facts recently brought to light touching the origin and dissemination of leprosy in Honolulu, though he admitted they required verification. He likewise mentioned several instances in which the disease spread from one member to other members of certain families where there could have been no hereditary transmission; and stated that the point to be solved was this: Do the natural relations of the country alone explain the development of the disease under these circumstances?—for if not the disease must be communicable. But he gave a guarded opinion upon the subject. He, however, inclined to the belief that the disease was not contagious in the ordinary sense of the word, but might be imparted by the imbibition of the excreta of lepers, just as cholera and typhoid are communicated; but inasmuch as the action of the poison upon the system was very slow, and did not develop the results of its operation for a long while, the connexion between the imbibition of the leprous poison and the outbreak of leprosy was difficult to trace. As regards the influence of sex, Dr. Liveing gave reasons for believing that the sexes were, in reality, about equally attacked by leprosy.

The general conclusions in respect of etiological considerations at which he arrived were that the *vera causa* was unknown; that amongst secondary causes, diet and hereditary predisposition were the most important; that climate, soil, and race were only slightly influential as factors in the genesis of the disease; and lastly, that, if not contagious, the disease is capable of being propagated from person to person by the imbibition of the excreta of lepers.

Dr. Liveing next entered into a clinical description of the main features of leprosy in its different varieties and the morbid anatomy, which included a digest of our present state of knowledge on the subject.

Speaking next of the alliances of leprosy, Dr. Liveing declared the latter to be akin in character, clinically, to maladies of the scorbutic class—such as ergotism, scurvy, pellagra, the button scurvy of Ireland, and the disease induced by the Lathyrus—due to defective or injurious food. He said it was impossible to find another disease more like it in general features and course than pellagra; and he pointed out the points of resemblance, and especially as regards causation. An incidental allusion was made to the question of the cure of the disease, which was pronounced to be unknown; and Dr. Liveing concluded, after emphasizing the importance of employing preventive measures if we wished to make any impression upon the disease, by thanking his audience for their attendance and attention.

Art. 76.—*The Pathology of Leprosy; with a Note on the Segregation of Lepers in India.**

By H. V. Carter, M.D., Bombay Army.

Communicated by Dr. Symes Thompson.

(*The Lancet*, April 5.)

In this paper—the result of observations made in Western India during the years 1860 to 1871—leprosy is considered as a whole, and its diagnostic characters are stated to consist in (*a*) skin changes, either produced by the well-known "tubercles," or evidenced by alterations of rather atrophic character, which result in a form of "eruption" corresponding in its typical manifestation to the "Leuke" of classical Greek writers, now widely known in Western Asia as "Baras," and having, it is thought, affinities with the "lepra" of Willan, &c., only that scales are wanting, owing to tropical influences on the skin. The name *Lepra leprosa* is suggested as suitable to this eruption. Superadded to these visible changes is (*b*) a prior and progressive impairment of the functions of the cutaneous nerves and branches, the structural alterations in which are regarded by the author as the characteristic lesion of leprosy. Hence result the marks presented by lepers, and one or other of which is the only infallible sign of their disease; the author knows of no characteristic prodromata. Subsequent changes are slow in progress, and are indicative of malnutrition of the frame both local and general, and hence susceptibility to corresponding hurtful influences. There are no symptoms of visceral lesions peculiar to leprosy; and while it is true that lepers die bearing the marks of their disease upon them, yet there is neither order nor uniformity in the time or mode of their decease.

Next are considered the morbid anatomy and histology of leprosy, and it is stated that the structural changes observed are due to exudation or deposit in the skin and appertaining nerve-trunks of a firm, translucent, colourless, or pale-reddish material, which may be distinguished by the borrowed terms hyalin-fibroid and hyalin-granular. As regards the skin, conjunctiva, and adjacent mucous membrane of the mouth and larynx, this deposit (here hyalin-granular) first appears within or immediately beneath the membrane proper; accessory organs, and even the blood-vessels, are secondarily involved; but it has been noticed that the tactile corpuscles disappear before other less sentient elements. As regards the nerves, this deposit (here hyalin-fibroid) first appears between the individual nerve-tubules, and within their sheath—*i.e.*, the neurilemma of the funiculus; the outer envelope of connective tissue is hardly changed. By accumulation of the new material the tubules are separated, compressed, emptied, and eventually destroyed.

The microscopic characters of this leprous deposit are then referred to. The material looks exudative, but may be derived from prolifera-

* Read at a Meeting of the Royal Medical and Chirurgical Society, March 25th.

tion of connective-tissue corpuscles; it undergoes slight development, and is susceptible of degeneration. In sixteen autopsies of lepers consecutively dying in hospital, no trace of deposit was noticed in the muscles, bones, or any of the viscera. The brain and spinal cords were wholly free from such deposit, &c.

Then are mentioned the general characters and distribution of leprosy in Western India. Reference is made to the author's late report on this subject, published in the Transactions of the Medical and Physical Society of Bombay for 1871; the previous volume for the year 1862 containing a description of the symptoms and morbid anatomy of leprosy.

Particular attention is invited to the three circumstances, that the disease is capable of being hereditarily transmitted, that society in India is minutely subdivided by caste regulations into sections within which alone is marriage permitted, and that certain races (the primæval) are apparently more largely affected by the disease than any others: hence certain obvious inferences.

The author adds that neither climate nor endemic influence has been shown to favour or check the prevalence of the disease; faults of diet, hygiene, or habit equally fail to account for its varied distribution. The population generally is affected to the extent of 1 in about 1000 inhabitants, but the proportion differs in the several races, and hence in localities occupied by those races more predisposed than others.

The seat, nature, and causes of the leprous disease are then inquired into.

It is affirmed that, so far as manifested, its seat is the cutaneous system, evidence to that effect being negative and positive. The latter includes certain interesting features revealed on dissection which are pointed out; thus, the cutaneous nerves are affected only, or chiefly and primarily, in that part of their course between the skin and the deep fascia of the limbs or trunk; and when the deeper-seated nerve-trunks of compound function are diseased it is only their sensory elements which appear to be affected, and often those in continuity with skin-nerves; details are given. It is added that motor paralysis is seldom marked in lepers who can crawl on, or bend, the stumps, which are sometimes all that remain of hands and feet. The author considers that there are trophic nerves in connexion with those termed sensory; and that nutrition, as a process, may be directly influenced by the nervous system. It is submitted that all the essential phenomena of the leprous disease may be traced directly or remotely to the characteristic nerve-lesion.

As to the nature of leprosy, it is briefly stated that the existence of a dyscrasia or primary blood-change seems hypothetical and even needless; it may be said that the proximate cause of leprosy resides in a faulty condition of certain tissues of the integument—a defect perhaps of development, certainly a quality transmissible to offspring.

Etiology of Leprosy.—Having regard to the fact that the inherited form of the disease is identical with that not known to be derived, the author surmises that the only true cause of leprosy may be hereditary or transmitted taint; or, in other words, a latent form of the affection itself. Respecting contagion, or inoculation, as causative influences

the author remarks on the absence of crucial facts. The grand test is necessarily wanting; and hence variety of opinion dependent on circumstances. As to endemic influences, it has been found that no one feature of air, soil, or water can be connected with the presence or frequency of leprosy. Europeans living long in India are virtually never affected with the disease. That malaria and leprosy are corelated does not appear.

An appendix has been added to this section of the paper referring more especially to the views of Professor Virchow.

Regarding the added note on the segregation of lepers in India, the author brings the subject forward rather to elicit opinion than to make assertion. It does, however, appear to him that the decline and extinction of leprosy in Europe during the Middle Ages is well and fully explained by the close, even if harsh, restrictions under which lepers were put by law and custom; and, holding this view, he would venture to recommend segregation as a fit measure for adoption in India, where the disease has been long established, shows no sign of diminution, and is constantly productive of much harm and suffering. Nor does there seem any other hopeful way of eradicating leprosy; for, in the author's opinion, the view that improvement in hygiene and general progress will, or has, led to the extinction of this disease, is not sustained on a wide survey of available data.

Art. 77.—*On Three Cases of a Peculiar Form of Molluscum Fibrosum in Children.**

By John Murray, M.D., Assistant Physician and Joint Lecturer on Pathology at the Middlesex Hospital, Assistant-Physician to the Hospital for Sick Children.

(*The Lancet*, March 22.)

The author communicated detailed particulars of the condition of the patients. All three cases occurred in the same family. The eldest, a girl, seven years of age, presented a variety of cutaneous growths on the face, ears, neck, fingers, and toes. Those on the face were of the nature of verruca plana; those on the ears of connective tissue and dermal hypertrophy; and, from their size and prominence on the margin of the helix, gave to the child a peculiar appearance. The affection on the neck assumed the form of crops of smooth warts, hard, pale, and with a glistening surface. The isolated cutaneous growths of the fingers were smooth warts, and few in number. The most remarkable phenomena, however, were the following: There were extensive connective-tissue growths, forming frequently distinct and circumscribed tumours, reaching to the size of an orange, on the face, scalp, trunk, and extremities; these growths were rapid in their increase, painless, deeply discoloured by extravasation of blood, and moderately soft and

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* Read at a Meeting of the Royal Medical and Chirurgical Society, March 11th.

elastic. In bony situations there were occasional periosteal enlargements. The last phalanx of the fingers, with one exception, and several of the toes, were hypertrophied to from three to six times their natural size; the enlargement was due apparently to irregular connective-tissue increase and hypertrophy of the dermal structures. The nails were correspondingly increased, and marked with transverse furrows. The temperature, which occasionally became elevated for a few days, seemed to point to intermittent increase of the growths, for on one occasion, at least, the extensive formation of new growth over the back was coincident with a decided elevation of temperature lasting for some days. The tendency of the tumours on the scalp was to increase until ulceration of the skin and sloughing of the tumour ensued. The gums were greatly hypertrophied, covering up almost entirely the teeth; they were fungous and papillomatous in appearance, and grew rapidly again when cut away.

The disease was more or less symmetrical on both sides of the body. There was no glandular affection, and the viscera were healthy. The child was deaf, but very intelligent.

The other two children, aged four and two years respectively, presented the enlarged gums and slight cutaneous affection, and the elder child had only recently exhibited an enlargement of the end of one of the fingers. This child presented also certain peculiar mental and moral phenomena, and gave little promise of speaking well.

The disease in all three cases had commenced a few months after birth. The eldest child in the family, a boy, ten years old, presented none of the symptoms found in the others. The parents were first cousins, but healthy. There was no evidence of syphilis or scrofula in them or in their history. The children's grandmother was stated to have died of consumption, but with this exception the members of the family were long-lived and remarkably healthy. There was no similar affection to that of the patients in the parents or any of their relations. The three affected children were born in a wretched and damp dwelling, and exposed to bad hygienic conditions most of their life. The eldest, and unaffected child, resided with the rest of the family, but was during the early part of his life not subjected to the same unfavourable hygienic conditions as the patients. The whole family had, however, for the past year lived in a good habitation, and otherwise comfortably; still the disease advanced in all the affected children. Several of the subcutaneous tumours had been removed, and exhibited microscopic characters allied to fibroma, with cartilaginous-looking structures in parts. Dr. Murray considered that the disease should be placed in the group of molluscum fibrosum. The enlargement of the gums and ends of the fingers, the deafness, mental and moral symptoms present in one or more of the cases, the symmetrical character of the affection, and particularly the occurrence of three cases in one family, were remarkable and in many respects unique features in the disease. He considered that the bad hygienic condition in which the patients had been placed may have acted as an exciting cause of the affection, but he thought the predisposing, if not the sole factor, to be the blood-relationship existing between the parents.

Art. 78.—*Report of a Case of Molluscum Fibrosum or Fibroma, with Observations.**

By George Pollock, F.R.C.S., Surgeon to St. George's Hospital.

(*The Lancet*, March 22.)

A woman, aged thirty-three, was admitted into St. George's Hospital with tumours of the skin, such as are known as "molluscum fibrosum," or "fibroma," and consisting apparently of excessive hypertrophy of the connective tissue. The patient had been the subject of these growths from childhood; they were small in their early condition, but had been slowly growing and increasing in number. The tumours occupy various positions; there are three large ones, and over one hundred smaller ones of various sizes, in different parts of the body; some as small as a split pea. One large one is attached to the back of the head, and is of the size of a small melon. Another occupies a space over the right shoulder, between it and the root of the neck. The most remarkable and the largest commences on the right side of the neck, by a pointed extremity, and is seen to extend below the umbilicus. Its attachment extends from the above point to the upper margin of the right mamma, and increases in breadth as it is traced from the neck to the breast. It consists of a long, thick, and broad pendulous flap of skin, about eighteen inches in length. Its anterior surface is thrown into several folds, which give it somewhat the appearance of coils of intestine. The general colour of the skin covering the larger tumours is darker than that of the rest of the body; its surface coarser and more rough, and pretty uniformly marked by obstructed orifices of sebaceous follicles. Sensation over the larger part of this large mass is impaired. A slight touch over the greater portion of the surface is not detected, but more severe handling is readily felt. In addition to these three large masses, various other tumours occupy the trunk; some solitary, some clustered; some with broad base, others pedunculated; one may be seen on the forehead almost flattened, while on the forearms are many suspicious spots of commencing future growths. One rather larger on the front part of the neck was partially removed, but has since increased in size.

When admitted the patient was in a very low state of health, and the removal of the portion alluded to was followed by a good deal of suppuration; but her health being greatly improved since then, removal of a large portion of the largest growth was proposed, and was much wished by the patient.

A microscopic examination by Dr. Whipham of the portion removed, as also of a second small tumour which was snipped off, gave the following results. The tumours were entirely covered by layers of epidermis and rete mucosum, resembling in every respect that of healthy skin. Immediately beneath and closely connected with the rete was a layer of wavy, well-defined fibrous, mixed with a small amount of yellow elastic

* Read at a Meeting of the Royal Medical and Chirurgical Society, March 11.

tissue, which in many places exceeded in thickness that of the epidermis and rete together. Proceeding inwards, the fibrous tissue which constituted its bulk became split up into separate wavy bands, varying considerably in thickness; and between these bands was an abundant growth of small, round, or oval cells, which were closely aggregated in large groups, or arranged in lines between delicate strips of fibrous tissue. In the central parts of the tumour, fibrous tissue, mixed with yellow elastic tissue, abounded; the fibrous tissue was less dense and more wavy, was split up into more distinct bands, separated from one another by wider interspaces, which interspaces were either empty or occupied by the cell-growth above mentioned. The tumour was well supplied by blood-vessels. In the larger piece sebaceous and sweat glands were present; occasionally, though rarely, a hair was found, always presenting a healthy appearance. The growth was due to excessive hypertrophy of the connective-tissue, and partly to abundant cell-growth occupying interspaces between the bands of fibrous tissue.

Virchow has published an engraving of a remarkable case of this disease, which represents numerous small growths over the whole body, and one very large one, which hung over the hip, and weighed some thirty-seven pounds. A somewhat similar case is to be found in the catalogue of Guy's Hospital Museum, illustrated by wax models of the tumours of the body; and in this case there was also a tumour at the back of the head, and one hanging down from the nates, some sixteen pounds in weight. This man died over eighty years of age. Another remarkable case is recorded in the Transactions of the Pathological Society, vol. xvi., in which the growth of the tumour occurred from the neck, and hung down below the umbilicus, very similar to the case of Mr. N. Hughes. There was also a large secondary tumour attached to the back part of the head and neck.

Dr. J. C. Warren has also described a peculiar case of skin tumour in his work on tumours. The tumour resembled a coil of intestine, and occupied the right side of the neck. It was removed, but returned in the course of some eighteen months.

It is worthy of remark that there is, to a certain extent, a correspondence in the position of the tumours in the cases alluded to. The trunk is most frequently the seat of the larger number of tumours, while the upper and lower limbs are often free. Little is to be said with respect to treatment; and, though there is a prospect of recurrence after operation, it is proposed to remove the larger portion of the anterior flap, as the patient is anxious to be relieved from the inconvenience she suffers from it.

Art. 79.—*On Neurotic Nævus.*

By Dr. Theodor Simon, of Hamburg.

(*Archiv für Dermatologie und Syphilis*, 1872, No. 1; *Archives Générales de Médecine*, Mars, 1873.

The author proposes to give the name of *neurotic nævus* to those forms which Barensprung has designated as unilateral nævus, and for which he admitted, as for zoster, an intra-uterine lesion of the spinal ganglia. This form is characterized by its mode of distribution, which corresponds

exactly to that of the spinal nerves. Simon distinguishes two varieties, regarding the affection from an anatomical point of view: 1st, the *trophic nævus* with hypertrophy of the papillæ of the skin, pigmentation, and moderate thickening of the epidermic layer, without hypertrophy of the cutaneous glands or hairs; 2nd, the *nævus of vaso-motor origin* with dilatation of the capillaries of the small veins, and the temperature of which is more elevated than that of other portions of the skin.

The lesion is sometimes limited to a single nervous branch, and at other times extends during extra-uterine life to other branches.

Simon bases his views on three cases which were under his own care and on two cases reported by others.

The first case he regards as an example of hypertrophic nævus corresponding exactly in its situation to the second branch of the fifth nerve. The patient was a young woman, aged eighteen years; the nævus was seated on the left side of the upper lip and extended as far as the median line; the outer limit extended from the left labial commissure over half of the space between the external angle of the eye and the helix; from thence a narrow portion ascended upwards and ceased just above the auricle. Within this narrow portion was found an isolated patch as large as a 50-centime piece. Internally the nævus was limited by the ala of the nose from its insertion to the root of the nose, the superior limit being formed by the left inferior eyelid. The mucous membrane of the velum palati, on the left side, and of the tonsil on the left side was strongly injected as far as the median line.

Simon quotes a second case, which was one of a nævus of vaso-motor origin limited to the second branch of the fifth nerve. This was present in a young woman, and occupied part of the forehead, the superior eyelid, the back, the ala, and the point of the nose. The conjunctiva was slightly vascularized; the interior of the eye was normal.

To these cases is added one reported by Rayer, in which vascular nævi occupying the trunk, the extremities, and half of the buccal mucous membrane, were seated exclusively on the right side of the body of a young man, aged twenty-four years.

An analogous case has been reported by Gerhardt. An infant, aged six years, an idiot, presented on the right half of the thorax an accumulation of papillomata disposed in streaks along the intercostal spaces; some of these were red and others pigmented; similar anomalies were presented on the right arm and over the left half of the face. Some of the teeth on the left side were smaller than corresponding teeth on the right side. The right half of the face was warmer and redder than the left.

Simon reports another case which was under his own observation. The patient was a female, aged thirty-one years, the subject of a congenital nævus corresponding to the frontal nerve, and in whom, when she was nineteen years of age, another nævus appeared over the external nasal nerve.

Art. 80.—*Treatment of Acne.*

By H. D. Bulkley, M.D.

(*New York Medical Record,* January 15.)

An elaborate paper on Acne, read by Dr. Bulkley at the New York

Academy of Medicine, and followed by an interesting discussion, contains some observations on the treatment of this troublesome affection that may interest our readers.

Dr. Bulkley, differing strongly from the local pathology of the Germans, and believing in the internal origin of the disease in the great majority of cases, relies most on constitutional remedies, together with attention to diet and exercise. Constipation has in most cases to be combated, but not by ordinary purgatives, the abuse of which has brought discredit on their employment in the treatment of acne. Attention should be paid to diet, exercise, and regularity in answering the calls of nature; and, when medicine is required, most success is derived from the employment of minute doses of aloes, combined with iron, given repeatedly after meals, and gradually diminished as the required effect is produced. He also prescribes a pill containing blue pill and compound extract of colocynth, of each two and a half grains, and one quarter of a grain of ipecacuanha, giving two such on alternate nights for awhile, and following them by Kissingen water. The dyspepsia which is so often present is usually of the acid variety, and much benefited by restriction in the use of starchy and saccharine substances, and of ale, beer, and wine, as also chocolate, fried substances, pastry, and coffee and tea in excess. When a stimulant is required, whisky or brandy should be preferred to ales and wine. Exercise in the open air is of very great importance, and neglect of it may be one reason why women are more liable to the disease than men. Dr. Bulkley has seen many cases injured by arsenic where this has been given in the early stages of acne; but he regards the remedy as serviceable later, when the eruption is drier and less inflamed, as a tonic having a special action on the skin. He has found acetate of potass serviceable in many cases, in doses of from fifteen to thirty grains, given in a considerable quantity of water between meals. It will not, however, effect a cure, tonics being afterwards required. Dilute nitric and phosphoric acids, with vegetable bitters, have also yielded good results, as also Kissingen water in pint doses before breakfast, the beneficial effects depending not upon its purgative principles, but upon its alkaline properties. Cod-liver oil, with iodide of iron, is useful in scrofulous subjects, and a mild mercurial course may be resorted to when there is suspicion of syphilis. Dr. Bulkley, although attaching by far the most importance to general means, finds that local means will hasten the cure, and the best of these is a lotion composed of sulphuret of potash and sulphate of zinc, of each a drachm to four ounces of rose-water. He has used collodion in order to contract the capillaries in acne rosacea, but without any permanent effect; and he has laid open the veins in this affection with some good results. One drachm of iodide of lead to one ounce of stramonium ointment has been of use in reducing thickening in indurated acne, and citrine ointment, diluted three times, has been of service in acne rosacea. Juniper and tar soap is of value when there is not much inflammation; but bichloride of mercury has not justified the frequent use that is made of it.

Dr. Weisse, after the correction of the constipation and dyspepsia attendant upon the disease, gives a decided preference to local treatment. After a thorough trial of the internal use of arsenic, he is convinced of its inefficiency. Iron, and particularly

the iodide, he has found useful in scrofulo-anæmic patients. He is able to testify to the success of Gubler's treatment by glycerine, and he has found with him that the subjects of this disease usually exclude fats of all kinds from their food. He therefore gives from half a pint to a pint of cream daily, as also almond or olive oil, and he explains the successful use of cod-liver oil by the same theory. In topical treatment he regards as the first essential the careful emptying the follicles of their contents, which may be done by a fine needle and well-directed pinching of the orifices. Next, inflammation should be allayed by warm water rendered milky by kneading a bag of bran in it, and used as a douche for ten or fifteen minutes two or three times a day. After trying all the applications that have been recommended, he gives the preference to those which are not irritating. Chronic papular and tubercular lesions, however, require nitrate of silver or more powerful escharotics. For the last two years Dr. Weisse has used with advantage an ointment composed of suet carefully worked up and scented, and a powder of equal parts of subnitrate of bismuth and prepared chalk. Before going to bed the patient uses the hot bran douche, and after careful drying the suet is gently applied to the face and left on. In the morning the face is not to be washed, and is to be freely powdered with the powder by means of a puff. In ten or fifteen minutes this is to be brushed off with a very soft brush, and carries the ointment with it. The redness and burning in acne rosacea are effectually allayed by an ointment consisting of sulphur ʒss, pulv. camphoræ gr. v, adipis ℥j, applied two or three times a day.

Dr. Peters considers acetate of potass as one of the most useful of remedies when the urine is scanty and dark-coloured. In doses of from twenty to forty grains it is a mild and efficient diuretic, not only increasing the quantity of urine, but also of its solid constituents, in a remarkable degree—acting as a depurative and eliminative remedy. The carbonate of potash, too, is an antacid, alterative, and diuretic, and in inflammatory acne ten or more grains may be given with from three to five grains of nitrate of potash a few hours after meals. Borate of soda is a refrigerant, diuretic, and emmenagogue, in doses of five to thirty grains; and Copland strongly recommends it for external use. A good lotion may also be made of—Borax ʒj, alcohol ℥ss, water ℥iijss; or borax, ℥ss to ℥viij water; or borax, ʒss to aq. flor. aurant. and aq. rosar. āā ℥ss. It is especially useful in acne attended with amenorrhœa and uterine disease. When there is constipation with amenorrhœa, three or four grains made into a pill with one grain of aloes is very useful. The muriate of ammonia is very useful when there is amenorrhœa with bilious derangement—given in five or ten-grain doses three times a day in water, or made into a pill with aloes. It should also be used as a lotion. In very obstinate cases of acne indurata and rosacea, the iodide of sulphur may be given in quarter or half-grain doses, increased to one or three grains, aided by an ointment containing five, ten, or even thirty grains to the ounce of cerate. The green iodide of mercury is useful, also, in the indurated variety, and especially when there is old chronic disease of the liver. It may be given in quarter or half-grain doses, combined with conium or aloes, and an ointment (five to ten grains to the ounce) may be applied. In obstinate and rebellious

cases, the ammonia-chloride of mercury (five to ten grains to the ounce) is useful.

Dr. Howard states that he has used all the various local applications for acne, but had found none of great value. If evulsion can be provoked without too much irritation, the worst follicles may be emptied at the outset; and any remedy which prevents desiccation of the orifices and keeps the skin pliant is indicated. Constitutional treatment, according to the indications present, is what should chiefly be relied upon. Constipation is a very common coincident, and this is best treated by cream of tartar taken as a drink morning and evening in sufficient quantities to become slightly aperient. If there be indigestion, especially combined with acidity, the following powder may be given three times a day :—℞ Pot. bitart. et sod., ʒj; rhei pulv., gr. x; bismuth subnitr., gr. x; sod. bicarb., ℈j—divide in pulv. x. Under the use of this remedy the great majority of cases get well.

Dr. Taylor is of opinion that the essential point in topical applications should be to stimulate, and that want of success is often due to lotions being too mildly applied. He has derived benefit from sulphur, and especially from a lotion formed of lac sulphur ʒij, spt. camphor ʒij, water ʒiv. This should be rubbed firmly into the skin and allowed to dry over night, anointing slightly with cold cream in the morning. He has also derived benefit from iodide of sulphur ointment and from lotions of bichloride of mercury, from two to five grains to the ounce. Both he and Dr. Draper, at the College clinic, have seen marked advantage from the application of caustic potash solution (twenty to forty grains to the ounce), which is freely applied to the spots and allowed to dry, being afterwards washed off by very hot water. This is done at night, and next day the face is smeared with cold cream. Although acne is a troublesome affection, there is no necessity for the amount of polypharmacy that has been expended upon this disease, as relief can be obtained from sulphur, iodine, mercury, and potash. He has seen good results from mild ointments of red oxide or deuto-iodide of mercury, and in many cases from mercurial plasters. He has been disappointed in the use of the diachylon ointment recommended by Hebra, having found it slow and unsatisfactory. In acne of the nose the scarifications recommended by Hebra are absolutely necessary, and of great use. Not only should applications stimulate sufficiently, but they should not be changed too frequently, many failures being due to the remedies being continued for too short a time.

Dr. Caro states that he had been led by accident to discover that, while not neglecting internal remedies, obstinate cases of acne may be effectually treated by solar heat. He concentrates the sun's rays upon the part by means of a lens until the whole periphery is well burned. In a short time the skin becomes intensely red, and small vesicles full of serum begin to appear. These discharge during three or four days, when the healing commences, leading to the final cure. Cloths wrung out in cold water soothe the pain caused by the heat, and promote free secretion. If the acne is only a follicular affection of certain parts of the skin, with abnormal secretion, this blistering action of the sun is the best remedy, although the process is a painful one.

Art. 81.—*Treatment of Acne.*

By Erasmus Wilson, F.R.S.

(*Diseases of the Skin*, 6th edit., pp. 931; London, 1867.)

Mr. Wilson recommends nutritious and generous diet, air, exercise, amusement; tonics, the mineral acids and chalybeates; and his well-known ferro-arsenical mixture where there is debility of nutritive power rather than faulty assimilation. Locally, the hypochloride of sulphur ointment should be rubbed into the eruption at bed-time, and washed off in the morning with soap and cold water.

Art. 82.—*Lichenoid Eczema of the Face Connected with the Arthritic Diathesis.*

By F. M. Luther, M.D.

(*Medical Press and Circular*, March 19.)

Dr. Luther has arrived at the conclusion that defective innervation of the fifth pair of nerves, caused by cerebral congestion, is a chief cause of lichenoid eczema of the face, which cerebral congestion again is due to the action of the rheumatic or gouty diathesis, latent or suppressed. The poison, instead of locating itself in the joints, floats about in the system, and is in some cases arrested in the brain, causing, with other disagreeable symptoms, want of sleep, and following on this, with so much regularity as to look like cause and effect, a lichenoid eczematous eruption most noticeable at the termination of the lashes of the fifth pair of nerves, and which is more amenable to treatment by cholagogue or aloetic purgatives, followed or alternated by chloral draughts, so as to insure sleep and abate the cerebral congestion, than to any other method of treatment. As acidity impedes the hypnotic action of chloral, Dr. Luther usually directs a glass of fluid magnesia to be taken half an hour before it. Purgatives alternated with chloral should be our chief reliance. A long course of Turkish baths may prevent relapse, which is very usual, since either exposure to cold or worry induces it.

Art. 83.—*The Nature and Treatment of the Constitutional Forms of Eczema.**

By E. D. Mapother, M.D., Surgeon to St. Vincent's Hospital.

(*Medical Press and Circular*, February 19.)

The following facts seem to Dr. Mapother to prove that the gout poison is the cause of eczema:—

"1. Many other reliable observers have obtained uric acid and urates

* Read before the Surgical Society of Ireland.

from the exudation of eczema, and their increase in the urine in the chronic stage of each disease is undoubted.

"2. There is great increase of fibrine in the blood, and it exudes and spontaneously coagulates on the raw surface.

"3. Both diseases are characterized by great tendency to œdema and desquamation, which latter, of course, is universal in eczema, and occurs in three-fourths of the cases of gout when localized.

"4. Gout can be shown to be hereditary in about three-fifths of the cases, and such predisposition can be shown in about an equal proportion of general eczema. The greater proneness of the male sex is observable in both diseases.

"5. Every one must have remarked the frequent concurrence of symptoms of gout or of rheumatic gout and eczema. The Chelsea pensioners and the poorer agricultural people of this country exhibit this concurrence on the largest scale. I have seen very few cases of general eczema which had not been preceded or accompanied by what is so well known as acid or gouty dyspepsia.

"6. It is an aphorism of Hippocrates that gouty attacks are most frequent in spring and autumn, and the same may be undoubtedly said of eczema.

"7. The parts most distant from the circulatory force of the heart and least vascular, for example, the extremities and ears, are the most frequent seats of each disease, as the urates are most easily deposited.

"8. And lastly, the treatment proven to be useful in gout is usually successful in eczema."

Lithia, Dr. Mapother has found of the greatest use, as would be anticipated from its extraordinary powers of combining and dissolving with urate of soda and uric acid. It never fails to act as a diuretic, and the derivative influence from the skin to the more extensive surface of the kidney can be easily understood. He usually combines colchicum with lithia.

In inveterate cases of eczema arsenic may be necessary, and that metalloid is of great repute in chronic gouty and rheumatic affections.

Lastly, sulphur internally and externally, especially when used in the waters of Harrogate, Leuk, in Switzerland, and Lisdoonvarna, nearer home, is of equal efficacy in gouty and eczematous affections.

A few words about external treatment. Carbolic acid, diluted with seven parts of lard, keeps the skin pliable, prevents suppuration and fœtor, and has probably some astringent power.

In cases of universal eczema, which are rare—indeed, with the exception of one Dr. Mapother saw a month since in St. Louis Hospital, Paris, he has never met one,—starch baths, or still better, bran baths are called for, to check the excessive cutaneous transpiration.

Art. 84.—*Report on Cutaneous Statistics, derived from Private Practice.*

By H. S. Purdon, M.D., L.R.C.P., L.R.C.S.I., Physician to the General Hospital and to the Hospital for Diseases of the Skin, Belfast.

(*Dublin Journal of Medical Science*, December, 1872.)

For a considerable time Dr. Purdon has kept a note of all cases of skin disease occurring in private practice. Any case of interest has been accurately taken as regards diagnosis, history, and treatment. In the present paper he notices briefly some of these cases.

Acne occurred chiefly in young people, the face and chest, especially the back, being the favourite seat of eruption. This disease, as defined by Willan, consists in "tubercular tumours slowly suppurating," and is an affection of the glandular apparatus of the skin, the seat of which is in the sebaceous follicles, arising either from scrofula, exposure to excessive heat, dyspepsia, derangement of the uterine functions, or debility. Scrofulous acne occur chiefly on the face, are large and dusky in appearance, whilst the syphilitic are distributed over the whole body, of a characteristic colour, especially the areola at base, and when they disappear leave fine epidermic scales, that remain for some time. One case may be briefly mentioned. The patient, a young gentleman, aged sixteen, had his face literally covered with an extensive eruption of slowly suppurating pustules, with a red hypertrophic base. His health was excellent, and no assignable cause could be attributed for the disease. Dr. Purdon prescribed aperients, and opened every other day a few of the little elevations with a lancet, then through a capillary lymph tube injected, as recommended by Dr. Ross of London, a drop of nitric acid, which excited a new inflammation, so to speak, that caused obliteration of the follicle. Generally speaking, sulphur, either in lotion or ointment, is successful in removing the disease, provided there is not much acute inflammation present, whilst constitutionally tonics are indicated, as the citrate of iron and quinine. If the shoulders are the seat of the eruption removal of flannel from off the skin is absolutely necessary. Lichen of the face and in rare cases small lupoid tubercles are liable to be mistaken for acne. In very inveterate cases a strong creosote ointment is often serviceable.

Alopecia areata, which Dr. Purdon believes is non-parasitic, should be treated by frequent application of blistering fluid, cod-liver oil, or dilute nitric acid, or rum and sweet milk may be prescribed.

A case of *atrophy of the nails* was incurable; no syphilitic taint could be detected; debility and weakly parentage were considered to be the essential causes of the disease. In three cases of *hypertrophy of the nails*, all of which occurred in young ladies, a solution of gutta-percha dissolved in chloroform, and to which some carbonate of lead was added, was painted over the nails daily, after first scraping and filing them, and with good results.

All the cases of *condylomata* which had a broad base were touched as occasion required with a strong solution of chromic acid. This is a

deeply penetrating caustic, having a great affinity for oxygen, and giving rise to but little pain. In *callosities*, removal of pressure and subsequently the use of a solution of potash was the plan generally adopted. The course and duration of a callus depends upon the extent and continuation of friction and pressure. M. Vernois in his work has given an accurate table of the callosities produced in the various arts and occupations, chiefly peculiar to the French, and which will well repay perusal.

In the treatment of *eczema* Mr. Erasmus Wilson's excellent instructions were adopted in all cases. It is well known that eczema in the earlier periods of life usually attacks the head and face; in adults the body, and in old people the lower extremities. Arsenic was seldom prescribed, except in the case of infants, and then given in the form of Wilson's ferro-arsenical syrup. For eczema rimosum of the hands blistering, as recommended by M'Call Anderson, has been found most successful. If there is much infiltration of the subcutaneous tissue small doses of the bichloride of mercury are useful. The patient for some time is constantly to wear gloves, especially those made of india-rubber. Dr. Purdon has never observed this variety in those who work amongst greasy substances, as butchers for example. In lichen of the hands, which occasionally occurs as a sequel to an attack of eczema rimosum, Hebra's lithargyre ointment is a very good application, whilst in lichen of the face occurring in young people, and which may be mistaken for acne, our chief reliance is to be placed in salines, especially in purgative doses. After vaccination an eruption of an eczematous character occasionally occurs, usually attributed by the mother to impure lymph. These infants are generally of a strumous stock, or possess a delicate and easily irritated skin; but indeed any disorder occurring after vaccination is apt to be attributed to the operation.

For chronic eczema of the feet the Vienna plan of treatment by strapping the affected part with emplastrum plumbi spread on strips of linen is that to be recommended, provided the disease is chronic. Eczema is held to be a primitive lesion of the connective tissue with a secondary effect on the epithelial (*Annales de Dermatologie et de Syphilographie*). The diffuse character of the eruption is supposed to be due to the vessels being affected, also the glandular apparatus of the skin.

Erythema.—Dr. Purdon mentions one case. A young gentleman, who appeared to his friends in perfect health, one evening suddenly took ill; his face was swollen, eyes nearly closed, and skin presented a bright erythematous rash, whilst in some parts wheals were visible. His mother (although there was no sore throat) immediately put the attack down as one of scarlatina, a deception which he kept up. From peculiar smell, appearance of patient, and urine, and a few questions asked him privately, Dr. Purdon found the attack to be due to the administration of copaiba, which he was taking for gonorrhœa, a drug that is occasionally useful in psoriasis.

Furuncular affections, occurring in people advanced in years, is often a grave complaint. Mr. S., aged sixty-eight, consulted Dr. Purdon in the summer of 1871 for an attack of boils, some of which were of large size, and very painful. The previous summer he had suffered from a similar attack, and which he attributed to eating a great deal of fruit;

he was also gouty, and had been treated for some time by Sir Henry Thompson for an affection of the bladder, which, however, was now quite well, but he still drank a good deal of Vichy water, which had been prescribed. Mr. S. generally went to Harrogate every year. When Dr. Purdon saw him he was literally covered with boils in different stages, and confined to bed; pulse very weak and slow. Complained much of the pain caused by two large boils on back, in lumbar region, and which prevented any sleep. The urine was tested for sugar, but none found. The treatment adopted in this case was—beef-tea, given frequently, eggs, and champagne. Morphia at night, and an iron, quinine, and sulphate of magnesia mixture prescribed. To the boils various remedies were tried, as endeavouring to cause them to "abort," by touching the furuncle, in early stage, with nitrate of silver; to others pressure was applied; however, they generally suppurated, were then lanced, and dressed with an ointment of opium and zinc. Poulticing was out of the question, as it not only increased the pain, but also produced a new crop of boils, owing to tone of skin being still further weakened by heat and moisture. Several of the boils partook of the character of carbuncles, and were surrounded by what is called by Indian surgeons a "collar of brawn;" to these, the "core" of which was large and long in separating, nothing did so well as the household remedy of brown soap and sugar. The attack lasted fully two months, and was evidently due to a general break-up of the constitution.

Herpes.—This disease generally runs a rapid course, and the patient is well in a few days. In one case, H. zoster, Dr. Purdon prescribed ergot of rye and steel, as recommended by Dr. Woakes, who holds that herpes zoster is a neurosis, the eruption and neuralgic pain being due to effusion of liquor sanguinis from the ultimate branches of the artery, in the course of which the symptoms appear, and the cause of the effusion in this disease is due to a temporary suspension of the regulating influence exercised over the minute arteries by the sympathetic nerve fibres distributed there, and which suspension he believes ergot removes, by restoring the tone of the vessel, and allowing absorption of effused fluid to take place. The pain is caused by this effusion being between the fibrillæ of the sensitive nerve. As Dr. Anstie has remarked, "herpes may attend neuralgia of any superficial nerve." Another case of herpes occurred in the person of an assistant-surgeon in the Royal Navy. He had been troubled for several years with herpes præputialis, and tried various remedies. Upon examination Dr. Purdon found that the vesicles, which had all recently burst, were chiefly confined to the prepuce, which was very long. Moreover, he had what may be termed "urethrorrhœa," accompanied by extreme morbid sensibility. Circumcision was recommended as affording the best results, an operation to which he would not submit.

Pityriasis versicolor Dr. Purdon has frequently observed in phthisical persons; lotions containing bichloride of mercury or sulphurous acid were generally prescribed. In some cases tincture of iodine answered better. For obstinate cases sulphur fumigations are more useful, and the solution of the chloride of arsenic internally to change the soil, so to speak, upon which the parasite grows.

Psoriasis is essentially a scaly complaint, relapses being the rule.

Arsenic is the great remedy for it, especially Pearson's solution. Arsenic stimulates the epithelial structures. Quite recently Professor Gamberini, of Bologna, has recommended the alcoholic tincture of corrupted maize for internal use in psoriasis, and reports case cured by it. The moderate use of alcoholic stimulants do no harm in psoriasis, and are, Dr. Purdon believes, beneficial. M. Hardy, of St. Louis' Hospital, Paris, says that for certain forms of chronic skin maladies, nothing answers so well as india-rubber dressings to exclude the air, keep in the perspiration, and thus macerate the hardened epidermis.

Pityriasis Rubra Acuta.—Mr. W. B., aged forty, married, of good constitution, had an attack of rheumatic fever in Australia, in 1865. Since his return to Ireland has been troubled more or less by rheumatic pains, but not latterly; is sometimes, however, dyspeptic. During the autumn of 1871 felt out of health, and complained of loss of appetite. Shortly after a red-coloured blotch appeared on his chest, and in about two weeks spread over entire body. He had been treated with arsenic, sulphur, mercury, &c., for some two months before Dr. Purdon saw him. He was confined to bed, very weak, and troubled with a slight cough; the urine was high-coloured from urate of ammonia; skin of whole body red, dry, and covered with brawny scales, which rapidly exfoliated. The hair was also falling out. Every day the bed was emptied of nearly a coal-bucketful of scales. The redness of the skin disappeared on pressure. The nails were easily broken, and of a dirty dry appearance. Without entering into details, Dr. Purdon says that the general symptoms were slight, compared with extent of disease. The treatment adopted was nourishing food, cod-liver oil, which agreed with him, and of which he could take a large quantity, and a tonic mixture of dilute nitro-muriatic acid, in gentian. To relieve the kidneys he had a dose of the compound jalap powder every third or fourth night. Locally a liniment consisting of oxide of zinc, olive oil, and lard, was smeared three or four times daily over entire body. No water or soap to be used. To the more obstinate parts, as the hands, a solution of nitrate of silver was applied. This patient completely recovered. True pityriasis rubra generally ends fatally.

Prurigo.—One genuine case of prurigo presented itself six years ago to Dr. Purdon's notice. The patient, a lady, aged fifty-six, lived in the county Meath. She stated that her life was rendered miserable owing to her disease. Little or no sleep could be obtained. Some years previously she had consulted the late Dr. Neligan of Dublin, from whose prescription great benefit was derived. He had evidently regarded the disease as of neurotic origin, and prescribed very large doses of extract of nux vomica. The lady's skin was very dry, darker than natural, and wrinkled from absorption of fat. The normal lines and furrows were deepened. The pigmentation best marked where she had been obliged, owing to the itching, to scratch most. Dr. Purdon recommended her to use the Turkish bath, and prescribed a stimulating diuretic, whilst at night she had a full dose, ten grains, of quinine as an antiperiodic. Prurigo and pruritis have only one symptom in common—itching. The papules in the former are only found in places covered by hair. The *arrectores pilorum*, according to Dr. Derby, attain an unusual degree of development, and, through the increased traction exerted on the hair,

there results a more vertical position of the hair, as also a hernial protuberance of the inner wall of hair follicle, and outer root sheath. Moreover, a serous exudation takes place at base of pruriginous papule. True prurigo is a rare disease in this country, although pretty common in Southern Germany.

For *Pruritus* the application of sulphurous acid proved successful Pruritus ani is generally due to a fungus; the acid destroys this, and thus cures the disease. No doubt the portal circulation is often at fault, and which is relieved by aperients. A case of pruritus vulvæ occurred in a female of forty years; the mucous membrane exhibited not only the marks of scratching, but also little aphthous spots, like to those seen inside the cheeks of children, due to the fungus, the *oidium albicans*. A lotion of borax, morphia, glycerine, and water relieved the disease. Bromide of ammonium was administered as a temporary sedative.

Seborrhœa furfuraceu, or pityriasis capitis, commonly called "dandriff," was well-marked in one case, and which Dr. Purdon selects for the purpose of illustration. Mr. T., aged thirty, living in Lisburn, consulted the author for an affection of the scalp. His hair was rapidly falling out; scalp covered with white, thin, shining scales, which were continually undergoing separation. The loss of hair, as is usual in this disease, was most abundant upon the lateral regions of the crown. As he was slightly anæmic, iron was prescribed, and locally the head was to be sponged with the following:—Tannin, 12 grains; ether, 2 drachms; spirits of wine, 5 ounces; spirit of lavender, 1 ounce; and glycerine, 1 ounce. Pincus has shown the amount of the daily loss of hair in the first or seborrhœic stage of this disease, the minimum daily loss being from 30 to 70, and the maximum loss from 62 to 200 hairs. Dandriff, as is well known, consists in an excessive discharge of cells, abundant secretion from sebaceous glands, and fatty degeneration of sebaceous cells. In other cases, Dr. Fraser's, of Dublin, lotion was sometimes useful, and which consists of aromatic vinegar, tincture of cantharides, rum, and water. This is sponged daily into the roots of the hair.

Scrofuloderma shows itself by tenacity, persistence, and gradual extension to new tissue; also by participation of lymphatic glands and subcutaneous tissue, ending in suppuration. There is an absence of itching and generally of pain. It is better, Dr. Purdon thinks, to open early suppurating glands with a fine cataract knife, through a leech bite, and thus avoid a scar, which is due to subsequent puckering. If the gland has softened before it begins to adhere to the integument a long incision should be made, and the cheesy contents pressed out. This ought to be done before the skin is involved. The form of a scar due to a single incision without loss of substance depends upon the direction of the cut, more scar tissue being required when the wound is made in a perpendicular direction to the normal tension than when it is parallel.

Kerion occurred in a child six years of age, whom Dr. Purdon saw in consultation with the late Dr. Patterson of Belfast. The head was the seat of the complaint; the openings of the hair follicles were prominent, from which a peculiar secretion was poured out. The elevated swelling gave a boggy feel. The disease never suppurated. The glands in the neck were enlarged from irritation. Its parasitic nature

was not easily recognised, owing to the peculiar mucoid discharge acting the part of a parasiticide. The examples of *tinea tonsurans* and *tinea circinata* were, with two exceptions, all in children. One of the exceptional cases occurred in a gentleman, aged twenty-eight, sent by Dr. Gray of Castlewellan. The beard was chiefly involved. Dr. Purdon found a lotion of the hyposulphide of soda the most useful local application. The patient took arsenic and iron for several months, and to which is attributed the removal of the disease. In inveterate cases extraction of the hairs with Bazin's forceps is often required. A case of eczema marginatum or Burmese ringworm, supposed to be of parasitic origin, came for treatment; blistering was found of most use; subsequently Hebra's tincture of tar and black soap being used.

In conclusion, Dr. Purdon remarks, we are frequently asked by patients if they may use soap. As a rule, where the disease is acute, he thinks the use of any kind of soap to be injurious, and has little faith in so-called medicated soaps. However, it is sometimes necessary, for the purpose of cleanliness, to use soap, and one that will do no harm is to be recommended. For hospital patients Pear's transparent soap is recommended, and in private practice Rieger's "Savon d'Amandes Amères sans Angles," which is one of the most harmless and most delightful soaps Dr. Purdon knows of.

Art. 85.—*Treatment of Seborrhœa Capitis (Pityriasis Capitis.)*

By Louis A. Duhring, M.D.

(*Philadelphia Medical Times.*)

The author states that the first thing to be done in these cases is to remove the masses of desiccated sebum and epidermis. This is accomplished by saturating the hair with olive oil, retaining it on the head over night, and then washing thoroughly with the following: ℞ Saponis viridis, ʒiv; alcoholis, fʒij. Misce. This preparation is known as *spiritus saponis kalinus.*

If the amount of secretion be not great, the use of oil may be dispensed with. The way of applying the preparation is to take a small flannel rag, wring it out in hot water, and pour upon it about a teaspoonful of the spirit, which is to be rubbed into the head, adding a small quantity of warm water from time to time, so as to form a lather. This "shampooing" process to be continued for ten minutes, when the head may be washed with pure water and thoroughly dried.

The application is to be made morning and evening, and may have to be continued for some time. When the scales have been entirely removed, some such mixture as the following oil must be ordered: ℞ Acid. carbolici, ʒss; ol. ricini, alcoholis, āā fʒij. Misce. Sig. Apply after washing.

The object of this application is to relieve the dryness and contraction of the skin and hairs resulting from the use of the spiritus saponis kalinus.

Art. 86.—*Clinical Lecture on Lupus.*

By Henry Eames, M.D. Dub., Physician to Mercer's Hospital, Lecturer on Practice of Medicine in the Ledwich School, &c.

(*Medical Press and Circular*, Dec. 25, 1872.)

There are three species of this disorder—L. exedens, L. non-exedens, and L. erythematosus or hypertrophicus.

L. exedens is the most destructive and disfiguring variety. It most commonly commences on the face, though its ravages are by no means limited to that part. The exact situation that it selects by preference for its assaults is one or other ala of the nose. The destructive process is sometimes almost simultaneously commenced on the inner and outer aspects, and advances equally from both sides till the cartilage is entirely destroyed. The commencement of the disease is usually a small papule or nodule, which is brownish-red in colour, and causes no pain or itchiness. It appears hard, but if pressed with the point of a probe it is easily penetrated and bleeds freely. Other similar papules form around this first one, all, in some cases, shedding continually dry scales of epithelium. The disease may remain for a long time in this stage. These papules are composed of numerous cells proliferated from the rete Malpighii, mingled with granules of sebaceous matter, and traversed by a large number of blood-vessels, many of which are of new formation, chiefly derived from the papillary vessels which have increased in size. At the same time fibrous tissue of new formation is developed, which connects the papular growth with the tissues beneath. The inflammation, which is essentially chronic, is of a special plastic character, being in L. exedens accompanied by a cellular hyperplasia, which, from incomplete nutrition, becomes the seat of an ulcerative process, with purulent exudation and formation of crusts.

As the malady advances from the papular stage previously mentioned, the skin around grows red, tense, and shining. A scab forms on the summit of one of the nodules; this quickly increases in size by the addition of fresh matter at the base, and thus the scabbing process proceeds till the part is covered. On removing forcibly the overlying scabs, the surface, which is sunk below the general level of the surrounding skin underneath, is coated with a thin purulent ichorous fluid, through which granulations are protruding. These vary in size, some being little larger than a millet seed, and others the bulk of a split hazel-nut. These larger ones will on examination with a moderate lens be seen to be formed by the aggregation of a number of smaller granulations collected on a common base, which is often of a greyish hue. They are very vascular, bleeding freely when touched with a probe.

During the progress of the case a few attempts at cure will probably be observed, but renewed outbreaks of the disease will recur. At last, under suitable treatment, the healing process really takes place. From the whitish edge thin trabeculæ stretch inwards towards the centre, and gradually the surface is covered with a thin, smooth, transparent layer of fibrous tissue, through which the subjacent blood-vessels are visible. The layer in time becomes thicker, concealing the vessels

beneath, and closely resembles the cicatrix produced by a severe burn. But the process does not end here, for the inherent tendency of this tissue is to contract, and thus some of the most hideous effects of the disease result. The eyelids are drawn down (ectropium), the lids are drawn apart, exposing the gums, and the cheeks are dragged towards the neck.

Whilst this healing is taking place at one portion of the sore the malady may be extending at its edges. This form is called *Lupus serpiginosis exularans.*

Lupus non-exedens is characterized by the development of tubercles on the surface, as in the case of L. exedens; but there is this marked difference between these two varieties, that the non-exedens does not proceed to ulceration. Hence, we do not find the destruction of cartilages and bony structures as a consequence of this form of the disease. The cellular elements of the formation undergo fatty degeneration and absorption, whilst the fibroid tissue, attached to the deeper structures, contracts, depressing the surfaces and leaving a deep reticulated scar.

Lupus erythematosus commences as somewhat circular patches of persistent erythema. These at first are level with the surrounding cuticle, but after a time become elevated to a greater or less degree. The fibrous tissue of the corium is greatly hypertrophied. Overlying it is the new growth composed of numerous cells, which also fill the masses of the fibrous stroma. The sebaceous and hair follicles are also crowded with an exuberant formation of cellular elements. These cells also surround the hair shafts and the ducts of the glands, leading in this as in the other varieties to complete destruction of the glands of the affected part.

The gravity of this form of the malady varies much. Any *very* chronic erythema should awaken suspicion, such as a dull red patch upon the cheek, scalp, or nose, or chilblains, so-called, persisting during summer.

The amount of deformity left after the healing of L. erythematosus varies with the extent to which the heteroplastic and fibrous formations have proceeded. Whilst the edges are advancing, the disease at the point of origin shows a tendency to subside. Hard white interlacing cords are seen to traverse the centre, and the contracting force of the cicatrices may be as great as in either of the other forms. In some cases there is merely left a white glistening appearance of the integument traversed by a few enlarged red vessels.

The three varieties of lupus may all co-exist, or one may pass insensibly into the other. The tendency being usually to pass from the non-ulcerating to the ulcerating.

The disease may also appear on the mucous surfaces, only secondarily, if at all, implicating the skin. Thus the septum narium may be destroyed before the exterior of the nose is engaged. The palate or pharynx may be deeply ulcerated, dangerous narrowing of the throat being so produced. Lupus of the vulva, mons veneris, and genito-crural folds also occurs.

Dr. Eames cannot agree in the view that this disease is merely local. Having expressed his opinion of the constitutional origin of lupus in its

various forms, he recommends a treatment addressed to the constitution an well as local applications. Of internal remedies he would assign the first place in merit to phosphorus. It is especially in cases where the disease has appeared in connexion with failing nerve power that this remedy gives such happy results. In such failure, whether from overwork, continuous anxiety, excessively prolonged bodily labour, or venereal excesses, no medicine with which the author is acquainted will give results at once so striking and reliable. Dr. Eames is in the habit of giving the metalloid dissolved in oil, and enclosed in capsules containing 1-30th, 1-20th, and 1-10th of a grain of pure phosphorus. The first of these should be taken after meals, and if no symptoms of the drug disagreeing appear after a week, the 1-20th may be given, and after another week the 1-10th capsule. The symptoms alluded to are a burning sensation in the epigastrium, relaxed bowels, lassitude, loss of appetite, and a white silvery tongue. Should these present themselves the mineral acids in infusion of bark should be prescribed.

When the disease is connected with a history of struma, manifested either in the individual or the family, cod-liver oil with iodide of potassium and iodine are recommended, as well as arsenic. Dr. Eames has not found this last drug at all so useful in this malady as in other chronic skin diseases. To the anæmic iron should be ordered.

If there be dyspepsia and mal-assimilation of food nux vomica with the mineral acids in bitters is very useful, and generally pepsine will be a good addition to the treatment.

Local treatment must depend upon the condition of the sore, but should not be solely relied upon. When the disease is spreading there is a development of a cellular growth amidst the fibres of the surrounding cutis, which must be destroyed, whilst at the same time we endeavour by general remedies to remove the tendency to this heteroplastic deposit. The choice of the particular caustic does not so much matter. The acid tritrate of mercury, or potassa fusa, with an equal quantity of water, applied around the edges will answer well, taking care, however, not to cauterize too large a portion at once. Others prefer nitric acid, chloride of zinc, or nitrate of silver, whilst others again favour the potential cautery or the galvano-cautery.

After such applications as the foregoing soothing remedies, such as lead lotion with opium, will be needed. When the granulations of the sore have the bluish-grey tint, a lotion containing Friar's balsam, with a little carbolic acid, will be found very useful. The erythematous variety usually requires stimulation, and the above will be a good application. The pyroligneous oil of juniper with olive oil is also an excellent stimulant.

When the part has cicatrized over it will be well to protect the newly formed tissue from the air by coating it over with collodion for some considerable time. Recollecting how apt lupus is to recur the constitutional treatment should be long continued.

Art. 87.—*A Case of Melanodermy, extending over nearly the whole Surface of the Body; Sclerodermy restricted to the Fingers, with Atrophy of the Digital Extremities; Atrophy of the Right Half of the Face.*

By Dr. Lepine.

(*Gazette Médicale de Paris*, No. 15, 1873.)

A widow, aged fifty-nine years, was admitted into La Charité, under Professor Sée, in March, 1873. She stated that her general health had always been good, although she had formerly lived in moist climates. At the time of her admission into the hospital she was strong and well, and her appetite was not impaired; she complained only of a change in the colour of her skin and of slight impediment in the movements of her fingers.

About three years previously she first noticed a dark coloration of the skin; shortly afterwards she suffered from acute pain in the left arm, but this did not persist. About ten years previously the fingers of the left hand had been first attacked with the affection which they presented at the time of admission; six months later those of the right hand were attacked.

On admission the greater part of the surface of the body presented an abnormally dark coloration; the legs and feet were the only parts excepted. This coloration varied much in intensity: in the hypochondriæ it was deep brown and almost black; on the abdomen, chest, neck, and back it was brown, but not so deep; the thighs were much pigmented, but with this peculiarity, that they were the seats of numerous white patches where the pigment was wanting; the neck presented numerous traces of a pustulo-bullar eruption; the face and superior limbs and hands were of a light brown colour.

The skin on all the digits was thin and like parchment; the coloration here was not deeper than that of the hands and forearms. One could not by pinching the skin, even on the dorsal surfaces of the digits, make a fold. The articulations of the fingers seemed to be somewhat enlarged, but there was no marked swelling of the peri-articular tissues; the movements of the fingers were impeded rather by the condition of the skin than by the consequences of a veritable arthritis. The fingers were not painful. The last segments were much reduced in size, and reduced in length by one-half; the cutaneous sensibility of the fingers, even on the palmar surfaces, was much diminished; the fingers were naturally cold and never perspired.

There was marked asymmetry of the face, the duration of which the patient was not able to state exactly. Independently of the loss of the right eye, which had resulted from an accident, the right half of the face was smaller than the left. The skin on the right side was more delicate, but the difference between the two sides in this respect was very small; it depended in a great measure, apparently, upon a diminished amount of subcutaneous tissue on the right side; sensibility was diminished on this side. The tongue was quite intact.

Remarks.—"Although the co-existence of Addison's disease and of

sclerodermy has occasionally been observed in the same patient, I have thought it necessary to prove that in this case the idea of Addison's disease must be rejected on account of the conservation of the patient's strength and of the good state of her digestive functions. Besides, it is known that deep coloration of the skin is accompanied in a great number of instances by sclerodermy. It has been attempted to explain the pigmentation by the idea of a stasis of blood in the veins, compressed by the indurated tissues (Auspitz). But even in admitting that this hypothesis has some foundation, it will not explain those cases where the pigmentation extends far beyond the limits of the induration, and particularly the present case, where the sclerodermy was very limited and consecutive to the appearance of the melanodermy. So far from explaining this latter condition by the action of a local influence, I am disposed to admit that it is often due to the same cause as that of Addison's disease.

"Habitual coldness of hands affected with sclerodermy is noted in the majority of recorded cases; the present case, in this respect, conforms to the general rule. It differs from the majority of cases, however, with regard to anæsthesia, which existed only in the cases reported by Gintrac, Rilliet, Bruck, and a few other authors.

"Atrophy of the phalanges has been frequently noticed in cases of sclerodermy of the hands.

"The face of my patient did not present the appearances of true sclerodermy. The very exact limitation to the right half of the face of slight atrophy of the subcutaneous tissues, and the absence of induration, lead me to regard the affection here as one known under the name of facial tropho-neurosis. The co-existence of this affection and sclerodermy, limited to one limb, has recently been recorded.

"To resume. Here is a woman previously submitted to the influence of humidity, who has been affected successively with: (1) melanodermy; (2) slight sclerodermy of the fingers, commencing in those of the right hand, accompanied by atrophy of the phalanges and anæsthesia; (3) atrophy of the right half of the face, with preservation of the general health. It is more than probable that these various affections are dependent upon some marked change in the nervous system. This case is more complete, in certain respects, than those previously published, and it seems to show the insufficiency of the designation of sclerodermy when applied to simpler cases."

SECT. III.—FORENSIC MEDICINE.

ART. 88.—*On the Treatment of Snake-Bite.*

By J. FAYRER, M.D., C.S.I., Hon. Physician to the Queen.

Dr. Fayrer, in his magnificent work on the Thanatophidia of India, shows the utter inutility of the so-called antidotes against the bite of poisonous Indian serpents, and summarizes as follows all he thinks can be done in cases of this kind:—

"Apply at once a ligature or ligatures at intervals of a few inches, as tight as you can possibly tie them, and tighten the one nearest to the

wound by twisting it with a stick or other such agent. Scarify the wound and let it bleed freely. Apply either a hot iron or live coal, or explode some gunpowder on the part, or apply either carbolic or some mineral acid or caustic. Let the patient suck the wound whilst you are getting the cautery ready, or if any one else will run the risk let him do it. If the bite be on a toe or finger, especially if the snake has been recognised as a deadly one, either completely excise or immediately amputate at the next joint. If the bite be on another part, where a ligature cannot be applied, or, indeed, if it be on the limbs above the toes or fingers, cut the part out at once completely. Let the patient be quiet. Do not fatigue him by exertion. When or even before symptoms of poisoning make their appearance, give eau de luce, or liquor ammoniæ, or carbonate of ammoniæ; or, even better than these, hot spirits and water. There is no occasion to intoxicate the person, but give it freely, and at frequent intervals. If he become low, apply sinapisms and hot bottles, galvanism, or electro-magnetism over the heart and diaphragm. Cold douches may also be useful."

Art. 89.—*On the Treatment of Snake-Bite.*

By Professor Halford.

(*Medical Times and Gazette*, April 26.)

A supplement to the *Official Gazette of India* of February 22, in a very voluminous paper, reprints Professor Halford's paper "On the Treatment of Snake-bite" of June, 1870, from the *Australian Medical Journal*, and gives the remarks of the officers of the Indian Medical Service thereon. Professor Halford's paper contains a statement of facts, from which it would be in the highest degree irrational to withhold assent—viz, that a large number of persons who seemed to be dying, and probably actually were dying, from the bites of snakes in Australia, recovered after the injection of thirty minims of liq. ammoniæ (P.B.) into a superficial vein. Professor Halford thus summarizes the effects of the remedy:—"The alkali soon reaches the heart; vigorous contractions follow; blood that was recently stagnating in the capillaries passes on; cut vessels which had ceased bleeding, bleed afresh; the temperature rises, the colour improves, the muscles contract, the sensory ganglia respond to external impressions; the nearly quite inanimate mass is now animate; light and sound are perceived; the faces of friends are recognised." There is no doubt that the injection thus proposed would be a valuable remedy in certain cases of poisoning; but Professor Halford goes on to give a theory of the *modus operandi* of this remedy in snake-bites. He assumes that a something is introduced into the blood in snake-poisoning which has three effects —first, to destroy the fibrine and render the blood uncoagulable by the digestive virtue of some principle allied to ptyaline; secondly, to produce a great increase of white corpuscles in the blood, whether from the growth of germinal matter introduced by the poison, or from the increase of the white corpuscles (which seems to be Professor Halford's later view on the origination of some new corpuscles in the blood);

thirdly, as a result of the foregoing, that oxygen is used up, and that the effects on the nervous system are due to imperfectly oxygenated blood. How Professor Halford believes that this is remedied by the ammonia injection, may be gathered from what we have already quoted.

Now, we need not quote Professor Fayrer, whose splendid monograph on the Thanatophidia of India we have more than once noticed, nor Dr. Shortt of Madras, whose researches on snake-poison have long been carried on with the utmost industry and vigour, but there does not seem to be one of the hundreds of medical officers in India who can accept Professor Halford's facts or theories, *so far as Indian snakes are concerned.* If there be one thing more certain than another, it is that some snake-poisons—*e.g.*, cobra—leave the blood's power of coagulation unimpaired. Other snake-poisons—*e.g.*, daboia—render it quite fluid and uncoagulable, so that the patient, if he live long enough, bleeds from every mucous membrane. And yet these latter (viperine) snakes are not so fatal as the former (or colubrine). Therefore, any appreciable change in the coagulability of the blood is no element in the fatality of snake-poisons. In the next place, practitioners in India positively deny the increase of white corpuscles, alleged to follow the bite of snakes in Australia. And lastly, the snake-poison seemed more nearly allied to aconite or some such deadly narcotic than to one which simply deprives blood of its oxygen.

In justice to Professor Halford it must be added that his views seem sometimes to be misunderstood. He does not advise the *subcutaneous* injection of ammonia—*i.e.*, into the areolar tissue, as morphia is injected; on the contrary, he insists that it shall be delivered into the current of blood within a vein. Moreover, he does not propose ammonia as an antidote to the poison (as white of eggs would be an antidote to corrosive sublimate, or quinine to ague), but as a means of rousing the heart's action, and enabling the victim to outlive the effects of the poison. But he is now fairly challenged by the Indian practitioners to repeat their experiments. Cobra poison can easily be sent to Melbourne; it can be administered in graduated doses; and then the power of ammonia, such as it is, may be set at rest once for all.

Art. 90.—*Treatment of Snake-Poisoning by Artificial Respiration.*

By J. Fayrer, M.D., C.S.I.

(*Indian Medical Gazette*, October 1, 1872.)

Dr. Fayrer, who has so frequently experimented with snake-poison, states, that since his return to England he has made some further observations on the action of cobra-poison.

"In the third experiment—the most interesting—a large, vigorous fowl was poisoned by injection of a couple of drops of the poison, diluted with water, into the thigh; it evinced the usual indications of poisoning, fell over with its beak resting on the ground, and went into convulsions—the comb and wattles becoming quite livid. At this stage the trachea was opened, a tube introduced, and artificial respiration

commenced; as the blood became aërated, the lividity of the comb and wattles gave place to a bright florid tinge, and the convulsions ceased.

"On ceasing to inflate the lungs, the comb and wattles became livid again, and the convulsions recurred.

"This was repeated many times, always with the same result, until the artificial respiration was stopped, when convulsions due to non-aërated blood (asphyxia) closed the bird's existence.

"This seems to indicate the possibility of life being preserved, if respiration could be kept up long enough to allow of the elimination of the poison by natural, *aided* by artificial means. Whether the injury done to the nerve-centres by the presence of the poison be of such a nature as to be irremediable, I cannot say (in severe bites I should fear it is); but evidently from this experiment, which I hope to repeat, benefit may be hoped for from artificial respiration; and I beg of you to notice this, that those who have the opportunity in India may repeat the experiment, and test its efficacy further."

Art. 91.—*On the Action of Cobra Poison.*

By J. Fayrer, M.D., C.S.I.

(*Indian Medical Gazette*, January 1.)

Dr. Fayrer states, that "the action of cobra poison, evidently in some, if not in all respects, resembles that of the curara or wourali, which kills by paralysing the peripheral distribution of the motor nerves.

"Animals so poisoned have been recovered by artificial respiration, after being for hours in a state of seeming death. I do not yet feel at all certain whether cobra poison acts on the nerve-centres alone, or on the peripheral extremities, as in curara; perhaps it may be a combination of both. But it appears to me that this method of sustaining life by artificial respiration, which might be done in ordinary bites, offers the most reasonable prospect of enabling the patient to live until the excreting organs shall have eliminated the poison from the system. I at the same time cannot but express my fear that irreparable mischief may have been done by the poison, which may prevent recovery in cases where severe poisoning has occurred.

"I hope to pursue the subject further; meanwhile I believe that the most rational ground of hoping for relief is indicated."

Art. 92.—*Treatment of Poisoning by Hydrate of Chloral.*

By Dr. Erlenmeyer, Jun.

(*Med. Chir. Rundschau*, Oct. 1872; *Brit. Med. Journ.*, Nov. 9, 1872.)

The author remarks that the quantity of hydrate of chloral required to produce poisonous symptoms is undetermined. The smallest quantity known to have produced poisoning is two and a half scruples; while, on the other hand, as much as 460 grains has been taken without danger. The symptoms of poisoning by chloral are, diminished fre-

quency of respiration, redness of the conjunctivæ, contraction of the pupils, lividity of the lips, and falling of the lower jaw: the state of the pulse has varied very much in several cases. The most important indication is the removal, as quickly as possible, of the chloral remaining in the stomach, or its dilution by water containing tea, coffee, or rum. The second indication is to restore the respiration. Not much benefit is to be expected from the use of strychnia, physostigma, morphia, camphorated ether, or ammonia, which are supposed to act as antidotes to chloral. Transfusion of blood may perhaps be found useful, as it has already been in poisoning by chloroform.

Art. 93.—*Poisoning by Carbolic Acid; Recovery.*

By Dr. Mosler of Greifswald.

(*Deutsch. Archiv f. klin. Med.*, x. 1.)

The author relates the case of a man who drank in place of his accustomed glass of "schnaps" one containing a mixture of between two and three drachms of carbolic acid. He immediately fell insensible, and was convulsed. When Dr. Mosler saw him eighteen minutes afterwards, the extremities were cold, the pulse scarcely perceptible, the heart's action irregular, the breathing stertorous; consciousness was lost, and he was in a state of intense trismus—in fact, he appeared to be moribund. Dr. Mosler immediately had his mouth held open by a wooden gag, and poured warm water into the stomach through a tube; he then fixed an india-rubber pipe to the end of the tube, raised the patient, and bent him somewhat forwards; this was at once followed by the escape of a large quantity of fluid smelling strongly of carbolic acid. As consciousness did not return, Dr. Mosler, supposing that some of the carbolic acid had probably entered the blood and was acting on the brain, bled the man to the amount of about a pint. Consciousness then returned; the pulse became stronger, and the breathing more tranquil. The blood that was removed had an odour of carbolic acid. For some days the patient had irritation of the throat and slight gastritis; but was dismissed cured on the eleventh day.

Art. 94.—*Report of a Case of Attempted Suicide with Petroleum.*

By J. Steininger, M.D.

(*Centralblatt f. d. Med. Wissenschaften*, July 13, 1872; *American Journal of the Medical Sciences*, April, 1873.)

The author relates a case in which a widow lady, forty-five years of age, in an attempt at suicide swallowed a pint of merchantable petroleum. What is remarkable, but slight indications of intoxication ensued; there was only slight pain in the region of the stomach, and but little febrile excitement. From the entire surface of the body was exhaled a strong odour of petroleum, while the breath was entirely free from it.

It is somewhat curious that the urine received in a glass vessel presented floating on its surface a layer of petroleum 50 ccm. in thickness, not as a secretion of the kidneys, but as the effect of a kind of mechanical infiltration. The urine gave a slight alkaline reaction, and contained in every 1000 parts one of albumen, and was rich in pus and epithelial scales. For six days the smell of petroleum was given out from the patient's skin. Entire recovery finally ensued. In the outskirts of Vienna, Dr. S. remarks, petroleum is drunk by the common people, in the same way and for a similar purpose as ardent spirits is by others.

Art. 95.—*Case of Poisoning by Nitrate of Potash at the Jervis Street Hospital.*

Under the care of Dr. Macswiney.

(*Irish Hospital Gazette*, January 1.)

Dr. Macswiney relates a case of poisoning by nitrate of potash which confirms much of what is already known of the effects of a large dose, viz.:—

1st. That it is an irritant poison.

2nd. That it sometimes causes very alarming symptoms.

3rd. That there are *nervous* symptoms sometimes present, as indicated by the *stupor* in this case.

4th. That death, although seemingly imminent, does not always follow the most dangerous symptoms.

As to the treatment of such a case as the one recorded, Dr. Macswiney remarks that the indications are—(*a*) To remove the poison from the stomach. (*b*) To allay irritation. (*c*) To subdue inflammation.

Art. 96.—*Case of Poisoning by Sulphuric Acid.*

By Thomas Bond, F.R.C.S., M.B. Lond.

(*Medical Press and Circular*, December 4.)

At a meeting of the Medical Society of London, on November 18th, Mr. Bond related an interesting case of poisoning by sulphuric acid. On the 28th August, C. B., a woman, æt. thirty-one, was found in St. James's Park on her hands and knees vomiting violently; was brought to King Street Police-station in a very exhausted state, but sufficiently conscious to make known that she had taken sulphuric acid. She appeared to be in great agony. Copious draughts of chalk-and-water were administered, and she vomited a large quantity of black matter, apparently food recently taken. She was removed to an infirmary, and during the night was delivered of a full-grown child. She rallied and gained strength, progressing favourably for a fortnight, when she complained of sickness and a difficulty in swallowing her food. On examination a large circumscribed swelling was observed commencing opposite the cricoid cartilage and extending down the course of the trachea two inches, moving on deglutition. Mr. Bond attempted to pass a stomach

pump, and also a No. 6 gum elastic tube, but without success. In a few days she was unable to take any fluid whatever. He was advised against the operation of gastrotomy, and instead he inserted a piece of stiff copper wire into a No. 6 tube, and after much difficulty forced it through the stricture and into the stomach, and injected sustenance twice a day, the size of the tube being increased. The swelling disappeared; but the patient gradually got weaker, and died on the 4th October. At the post-mortem: The mouth and fauces were found quite recovered from the effects of the acid, and on opening the œsophagus no trace of stricture nor any exudations, but complete absence of the mucous membrane. (Specimen shown.) The mucous membrane of the stomach was quite black and partially detached at the cardiac extremity, and underneath it patches of fibrinous exudation a quarter of an inch thick. The deductions Mr. Bond drew were—1st. That a stricture of the œsophagus may be safely dilated, and that probably the fibrinous exudation observed under the coats of the stomach had also taken place in the œsophagus, and was the cause of the strictures; 2nd. That the operation of gastrotomy must have been ineffectual, as the woman died from the injury done to the coats of the stomach.

Art. 97.—*Atropine, an Antidote to Opium.*

By James Johnston, M.D., Medical Officer to the Chinese Hospital, Shanghai.

(*Medical Times and Gazette*, February 15.)

The conclusions Dr. Johnston has come to with reference to the treatment of cases of opium poisoning are—

1st. That in mild cases, when the patient is seen within one or two hours after taking the poison, and is conscious and able to move about, with pupils uncontracted and moveable, the ordinary treatment by emetics, etc., will usually suffice for recovery; but the greatest watchfulness and care are necessary, for even in the mildest cases dangerous symptoms speedily set in. As a rule, whenever there is great drowsiness, with contracted pupils, after the evacuation of the contents of the stomach and moving about of the patient, it is advisable to bring the system under the influence of atropine at once.

2nd. The state of the pupils is of the first importance. Whenever they are firmly contracted to a pin's point, there is danger; although the patient for the time may seem but slightly affected, sooner or later coma inevitably comes on. It is, therefore, advisable in such cases to use atropine at once.

3rd. That in cases when the nervous centres do not respond to the cold douche and moving about the patient, it is not only useless, but mischievous, to persist in attempts to drag the individual about, as it only increases the exhaustion, which is one of the greatest dangers in cases of opium poisoning. The treatment for such cases is to place the patient in the horizontal position, and inject the atropine subcutaneously, and, if necessary, assist with artificial respiration, and, in case of exhaustion, to strengthen the circulation by applying warmth

and counter-irritation to the limbs, and by the administration of stimulants, such as coffee, ammonia, brandy, etc., internally.

4th. That in cases of profound coma from opium poisoning, with perfect insensibility, firmly contracted pupils, and stertorous breathing, atropine should be exhibited at once, and the patient carefully supported afterwards by the administration of coffee, ammonia, and stimulants.

5th. That, when the system is fairly under the influence of atropine, with respiration tranquil, however slow it may be, it is undesirable to interfere by artificial respiration, as it only embarrasses the breathing and interferes with the tranquil sleep which usually follows the exhibition of atropine.

Art. 98.—*On the Value of Microscopic Extravasations of Blood in the Mark formed by the Cord in Individuals who have been Hanged or Strangled.*

By Dr. Bremme.

(*Vierteljahrschrift für Gerichtliche und Offentliche Medicin*, Bd. ii. Heft 13.)

1. If death has been instantaneous, and the cord removed immediately after death, no extravasations will be found in the subcutaneous connective tissue at the mark formed by the pressure of the cord in individuals killed by hanging or strangulation.

2. When the cord is allowed to remain for some time after instantaneous death, extravasations may be found.

3. If death has not been instantaneous, extravasations will be produced, whatever may have been the period of the application of the cord.

4. It is impossible to distinguish the extravasations produced during life from those formed after death.

5. For these reasons, microscopic extravasations have no diagnostic value in the determination whether the cord has been applied during life or after death.

Art. 99.—*On Examination of the Cervical Mark formed by the Cord in Hanging and Strangulatian.*

By Dr. Neyding of Moscow.

(*Vierteljahrschrift für Gerichtliche u. Offentliche Medicin*, Bd. xii. Heft 2; *Annales d'Hygiène Publique*, No. 80, 1873.)

To determine whether the cord has been applied before or after death is difficult, and often impossible. Ecchymoses, which alone give a real diagnostic character in this question, are rare, and all the other lesions may be met with in both cases. M. Neyding has submitted the furrow to microscopical examination and has thus discovered a lesion which can be produced only during life—viz., capillary injection and microscopical ecchymoses.

The author takes the skin from the anterior part of the neck, where the mark is usually less deep, and the cadaveric hypostasis and imbibi-

tions take place later. The skin, together with the subjacent cellular tissue, is macerated in alcohol, and is then examined under weak powers. In about twenty-five out of thirty instances both longitudinal and transverse sections show hyperæmic vessels and small extravasations of blood in the skin and cellular tissue. These latter may be perceived even by the naked eye in the forms of black and yellowish spots and of small striæ; they do not exist in all parts, but are found in patches, sometimes in the middle, sometimes at the margins, of the groove. Their diameter varies from $\frac{2}{25}$ to $\frac{2}{5}$ of a millimetre, and in form are rounded or oval. Usually by the side of a larger extravasation several smaller deposits are to be found. A dilated vessel may sometimes be discovered terminating at a point of extravasation. The part at which these lesions are the most marked is the junction of the skin with the subcutaneous cellular tissue. The hair bulbs and surrounding parts are also the seats of extravasations, which, however, are much smaller. In parts where the skin is denser, as in the neck, one finds, instead of microscopic ecchymoses, transudations of blood into the fatty cellular tissue.

In what way are these small hæmorrhages produced? The cord is not generally smooth, its surface being irregular, so that the pressure upon the skin is not the same at all points; the projections compress the parts more than the intervening hollows, and the blood of the more forcibly compressed portions is driven violently into the other portions of the skin; but as these latter, corresponding to the folds of the cord, are limited by portions subjected to a former pressure, the blood cannot escape from them and spread out in the neighbouring parts, and rupture of the capillaries with ecchymosis is thus readily produced; when the circulation has been arrested, and death has taken place, the cutaneous vessels about the mark in the neck remain in the condition in which they existed at the time of death; because the anastomotic vessels being compressed, the contents of these vessels cannot escape at any point. At a later period, and when desiccation has taken place, their permeability becomes still less.

If the conditions permitting the production of the preceding lesions be thus considered, it would be more than probable that they are absent in cases where the cord has been applied to a cadaver. M. Neyding has demonstrated this by experiment. In more than ten instances he applied cords of all kinds to the necks of cadavers two or three hours after death, and allowed them to remain for twenty or thirty hours. In no instance was he able to discover these congestions and capillary extravasations of blood; all that he observed was a few isolated, slightly dilated vessels. In one case where the cord had been applied about an hour after death and forcibly tightened, he found in the furrow a circumscribed patch of fatty cellular tissue, slightly imbued with bloody serum and pigment, and presenting a diffuse reddish-yellow coloration, but having nothing in common with a circumscribed extravasation. In six of the experiments the cord was applied with a double turn, but in none of these was the skin compressed between the turns found to be red; it always remained pale.

The author has not suspended a cadaver, but he is convinced that suspension would not modify the condition of the vessels and of the

blood. He has bound cords around limbs immediately after amputation, but never found either hyperæmia or ecchymoses. On one occasion he strangulated a foot a few minutes before amputation of the leg, and afterwards found in the subcutaneous cellular tissue much dilated vessels and even small extravasations.

One might further inquire whether a cord when applied after the occurrence of cadaveric hypostasis, would not produce minute hæmorrhages in the parts of the skin which are the seats of the suggillations? M. Neyding has not made any experiments on this part of the subject, and cannot give any categorical reply. He does not regard the question as a practical one, as the murderer who wishes to conceal his crime by suspending the cadaver does not wait for several hours before executing his project.

Art. 100.—*A New Test to prove the Presence of Actual Death.*

By Hugo Magnus, M.D.

(*Canada Medical and Surgical Journal*, November, 1872.)

In a recent number of Virchow's Archives, Dr. Hugo Magnus, of Breslau, contributes a paper in which he proposes a new sign of the presence of actual death which is of interest to students of medico-legal science. It is claimed to be a positive and unerring sign of death, and at the same time requires no medical or surgical lore in its application. It is based on the presence or absence of the circulation of the blood. Various methods have from time to time been employed, such as opening a vein or artery, or Brachet's method of puncturing some of the capillaries; these, however, have never been regarded with favour, and consequently have fallen into disuse.

Dr. Magnus's test is as follows:—

"If a limb of the body—a finger is best for the purpose—be constricted by a strong ligature, quite tightly, there will, if the subject be yet alive, be seen a reddening of the constricted member. First the part in question becomes red, and then the red colour becomes darker and darker and deeper in hue, till it is finally converted into a bluish-red, the whole limb being, from its tip to the ligature which encircles it, of a uniform colour, except that at the region immediately round the ligature itself there is to be seen a narrow ring which is not bluish-red, but white."

Art. 101.—*On the Action of Phosphorus on the Organism.*

By Dr. G. Wegner.

(*Virchow's Archiv*, Band xlv. Heft 1, 2, 1872; *Gazette Hebdomadaire*, No. 45, 1872.)

Whilst the study of the toxicological effects of phosphorus has been established on very numerous researches, we know but very little of the action of this substance employed in medicinal doses. The attempts of Gubler, Moutard-Martin, and others have not proved to us that the

effects of phosphorus as a medicinal agent can, in the actual state of science, be regarded as made clear. Dr. Wegner's observations, based on experimental researches, ought to attract the attention of therapeutists to results which will, without doubt, be the object of verifications.

The starting-point of the author's researches was a peculiar clinical fact observed by him in a patient, a workman in a match manufactory, whose leg was amputated on account of compound fracture. Dr. Wegner was struck during the operation, on the one hand, by thickening and adhesion of the periosteum, and on the other hand, by the rapid occurrence after the operation of necrosis and osteo-myelitis. He thought that chronic phosphorus poisoning might be the cause of important changes in the whole osseous system, and he was thus led to seek for similar phenomena in animals in a state of chronic poisoning by phosphorus. He administered phosphorus in the form of pills to dogs, cats, and rabbits, and also made these animals inspire the vapour. He then studied the effects produced on the stomach, and liver, and the osseous system.

Phosphorus in the form of pill produces no gastric disturbances when given in small doses. In larger doses or after a long-continued administration, phosphorus produces very important phenomena; the mucous membrane becomes hyperæmic and the seat of infarctions, hæmorrhages take place, and afterwards ulcerations. When small doses have been continued for a long time the gastric mucous membrane becomes smaller, its thickness is much increased, it is hardened and presents a brownish colour. The microscope presents deposits of pigmentary material in the membranes and glands.

At the same time morbid changes are developed in the liver. In chronic poisoning the morbid changes affect not only the cells, but also the cellular tissue. Hence there results after the phosphorus has been administered for several months, a veritable cirrhosis of the liver, with atrophy of the glandular elements and induration of the interstitial tissue.

The action of phosphorus on the osseous system was studied in two different ways. In one Dr. Wegner caused the vapours of phosphorus to act directly on the periosteum; in the other he administered phosphorus in small quantities.

Periostitis and necrosis of the jaws were produced in rabbits by shutting up these creatures in an atmosphere containing the vapour of phosphorus. Periostitis at the surface of the tibia was also produced after wounding the tibial region. It seems therefore to be demonstrated that the vapours of phosphorus act locally on the bones, and also necrosis may, independently of any local irritation, be the result of general poisoning.

The action of phosphorous on the osseous system may be excited by small doses in the form of pill. Doses too small to affect the stomach may yet produce lesions in the nutrition of the bones. Those lesions are characterized by exaggerated production of osseous tissue at the level of the epiphysial cartilages, by diminution of the medullary spaces; in short, by a superabundant production of compact tissue, especially evident in the epiphyses, but demonstrated by the microscope on the periosteal surface. It is a remarkable fact that the relation of the organic and inorganic substances of the bone is not modified.

Dr. Wegner, after having discussed at length the various explanations which may be given of these phenomena, concludes that phosphorus administered in small doses produces a chronic poisoning characterized by a morbid change of the blood, resulting from the presence of phosphorus in this fluid. The osteogenetic tissues are acted upon in a special manner, and there is an exaggerated formation of compact tissue at the points where this tissue is normally formed.

The doses with which the author succeeded in bringing about a modification in the development of the osseous tissue were very small. In the rabbit he used daily one milligramme and a half, in the dog two milligrammes.

Art. 102.—*On the Causes of Death after Extensive Burns of the Skin.*

By Dr. Mendel.

(*Vierteljahrschrift für Gerichtliche u. Offentliche Medicin*, Bd. 1. Heft 13 ; *Annales d'Hygiène Publique*, No. 79, 1873.)

The cause of death does not exist in the suppression of the cutaneous secretions, nor can it be the elevation of the temperature of the body in consequence of a diminution of the loss of caloric by the skin ; on the contrary, a general reduction of temperature is observed. The quantity of fluid secreted by the burnt skin is rapidly compensated by augmentation of the renal functions and of pulmonary transpiration. Besides, a dry condition of the organs and a thickening of the blood has been recognised, rather than a dilution and internal aqueous imbibition. The excretion of carbonic acid by the skin and the absorption of oxygen are not sufficient to have much influence. The retention in the blood of other substances in the perspiration might be regarded as taking some small part, either through the direct action of these substances, or through the changes which they may undergo.

It is well-known that even a superficial burn will, when it extends over more than half the body, certainly be fatal, and that death will result in a great number of the cases where not more than a third of the body has been thus injured. Death occurs at one of these stages : at the period of irritation, at that of inflammation, and at that of suppuration and exhaustion; the mechanism being different at each.

I. *Causes of Death at the Period of Irritation.*

a. Paralysis of the Central Nervous System.—In the actual condition of our knowledge this can be explained only by hypothesis ; it is the consequence of an over-excitement of short duration, and which often escapes notice. It comes on shortly after the accident, and has not a long existence. The autopsy is negative.

b. Congestions of Internal Organs.—Here there is more or less violent reaction accompanied by congestions of the encephalon and its membranes, the lungs and pleuræ, the alimentary tube and the peritoneum, often with exudations of blood, particularly in the form of petechial suggillations, on the surfaces of the lungs and heart. These

congestions cannot be easily accounted for; they do not proceed from a mechanical repulse of the blood from the skin through the internal parts, for they are as frequently observed after superficial burns which produce a simple erythema with afflux of blood towards the skin. Another explanation involves the suppression of the cutaneous functions, death being attributed to asphyxia or acute morbid changes in the blood. The results of autopsies and the seats and forms of the internal congestions are in favour of asphyxia; but the exhalation of carbonic acid and the absorption of oxygen by the skin are of too little consideration for their arrest failing to be readily compensated by the lungs. The suppositions as to the formation of an hitherto unknown substance producing asphyxia, probably after the manner of oxide of carbon, and as to a purely nervous influence, are too hypothetical to possess much value. In most cases there is positively death by asphyxia, but the mechanism of this has not yet been explained.

The theory of M. Baraduc, based on the loss of serum and the thickening of the blood, possibly merits more consideration than has hitherto been accorded to it.

II. *Causes of Death at the Period of Inflammation.*

There are internal inflammations consecutive to cutaneous inflammation, the former being generally seated in the nearest organ to the burnt part. Encephalitis and meningitis are relatively rare; pneumonia, both lobar and lobular, is much more frequent; at times one meets with pleurisy and pericarditis; gastro-intestinal inflammation very frequently occurs, and the duodenum is the part most constantly involved; of this no cause has yet been discovered. A rarer lesion, and one almost exclusively met with in the duodenum, is an ulceration, analogous to the round ulcer of the stomach, and capable of causing peritonitis by perforation, and death by hæmorrhage in consequence of erosion of a vessel. To what is due the localization of this burn? One cannot invoke the speciality, either of Brunner's glands, or of hæmorrhagic infarctions, such as form the starting-points of ulcer of the stomach. It is probably due to some morbid change in the cell.

III. *Causes of Death in the Period of Suppuration and of Exhaustion.*

These are prostration, pyæmia, and septicæmia; renal disorganization with dropsy; internal hæmorrhage.

Cases have been observed in which death occurred more or less suddenly after complete cicatrization of the wound in the absence of any determining affection. Post-mortem examinations, however, have not been sufficiently complete to permit one to take those cases into consideration.

SECT. IV.—THERAPEUTICS.

ART. 103.—*On Ether and Chloroform as Anæsthetics.*

By CHARLES KIDD, M.D., M.R.C.S. (Eng.).

Dr. Charles Kidd, who has given very minute attention to the relative safety and value of ether as compared to chloroform as an anæsthetic, comes to the conclusion that all the recent controversy on these points is vitiated by insufficient knowledge or suppression of certain facts; notably and chiefly that while undue prominence has been given to all the deaths from chloroform, by the advocates of ether and advocates of nitrous oxide respectively (he himself being in reality in favour of both in certain cases), while undue popular clamour also increases against chloroform, all the deaths from ether are suppressed. Of these Dr. Kidd refers to forty-one alleged deaths from ether collected by the Boston Committee, nineteen mentioned by Trousseau, thirty-six given by Sabarth; and at Lyons, where it was inferred or mentioned, in the *Medical Record*, there had been no accident at all, Dr. Kidd refers to seven deaths as quickly following a panic about chloroform in France, not unlike that recently prevalent but now extinct, as just mentioned, in London. Dr. Kidd, in a debate at the Harveian Society, and in various recent continuous papers, has balanced the contending claims of the rival anæsthetics.

Of ether, Dr. Kidd says, "As one of the 'substitutes' for chloroform we have always inculcated the view that ether is safer, the death is at worst but a kind of profound intoxication, and no death perhaps ought to occur accidentally. An interval of fifteen years' observation and careful study, however, does not encourage one to recommend ether very strongly, especially when the deaths from chloroform are exaggerated and possibly an equal proportional number of deaths from ether suppressed. The ether controversies or single cases, can only mislead the profession by immature or hasty induction from narrow premises or collections of facts.

"The practical advantages of ether are about balanced by its disadvantages, and we are not far wrong in still adhering to the estimate formed fifteen years since, after carefully collating all the facts then available, published with accuracy in France (avec soin), that chloroform is probably about only-one third more dangerous than ether, or so far chargeable with accidents: there were then nineteen, now there are over fifty alleged deaths from ether.

"The beautiful discovery of anæsthetics, that we owe to Morton, coming in, as Lord Bacon says, aura leni with its 'still small voice,' is ill adapted to all the contentions, exparte advocacy, and twenty years' continuous doubt which have beset it; scribendi recte, &c., clearness, good sense, and practical experience, the first principles of authorship, too often lost in hasty generalization. Nitrous oxide, violently condemned as most deadly by sensation writers, who would give only one side of the seldom fallible advantages of ether as used in American ways and apparatus.

"At the London Hospital I have known ether to entirely fail; and

again, in an old patient it was followed by fatal coma, so that it is very uncertain. Ether has advantages that it would be unwise to omit, first and chiefly its alleged greater safety: some of this no doubt is owing to our greater familiarity with ether and its harmlessness as a common everyday drug; the patient is not so alarmed at taking it as some unknown and often denounced agent, like amylene, methylene, or chloroform.

"The advantages seem to be, that under ether the accident is not so sudden, and, as in part owing to hæmorrhage which the comatose ether condition induces, may by due precautions be met and obviated. No doubt any surgeon who has ever had the misfortune of one death from chloroform in his practice, with its sudden struggle, would be only too eager for any agent where the accident is not so quick, relentless, unexpected, and sudden. But neither in America, nor at Lyons, where there were seven deaths, does ether gain in favour.

"All the recent experiments with ether, it is well to remember, have been under the very best washed ether, perfectly anhydrous; this colourless, transparent, and very mobile liquid, neutral to vegetable colours; which refracts light strongly; sp. gravity 0·723, boiling point 96° F.; vapour inflammable and mixed with air detonates, the decanting of which ether, especially near candles, is a very dangerous process, as the whole room may be enveloped in flames. I have known ether to fail over and over again even at the chief hospitals, but the ether was bad and altered.

"Indeed Mr. South in Chelius, as the result at St. Thomas's Hospital, came to the conclusion that ether acts as an anæsthetic on special patients, and on others it does not act; and ergo, was not an anæsthetic at all. Then it was said to be particularly fit for old people; then, that it was free from the stage of excitement; then, the Medico-Chirurgical Society, from purely physiological, not practical ideas, recommended "mixtures" of ether already condemned in Vienna. Ether in fact is only about one-fourth as active an anæsthetic as chloroform, but almost useless if the ether is not anhydrous and first-rate in quality.

"It requires in fact a twenty-five years' watching of ether to say what is its present value or importance as an anæsthetic.

"The disadvantages are not a few; one feels no gratification in dwelling on them, only that they are forgotten. The difficulty first, of always procuring in town and country anhydrous ether, as the very best ether soon spoils and becomes miscible with water in ordinary bottles, when it is nearly useless and disappoints the surgeon. Then, the difficulty of carrying quarts of ether where three or four ounces of chloroform would answer the same purpose; the liability also of ether to take fire; the danger of the deep coma also in operations on throat, face, and tonsils. The objections to ether must be met with a discerning, accurate, unbiased calmness if the profession is to be placed not behind the general public; statistics as to equals compared to unequals have an evil tendency to mislead. Ether is a dangerous anæsthetic to rely on in cases where the galvanic or ordinary cautery may be necessary, or lighted candles flickering about a surgical patient's bed, as he may be enveloped in flames from the ether catching fire. Ether is inadmissible in all old people; and, as a rule, where severe bleeding is to be apprehended, in

uterine hæmorrhage especially; indeed, in all midwifery practice, if we want to save the infant. Notably in midwifery practice where there may be hæmorrhage, or instrumental trouble or delay, or ergot be necessary; and the ether will be found to have thoroughly saturated the system of the infant as well as the mother. Then ether vaporizes so quickly it is not desirable in hot summer weather or a very warm hospital ward, while in India or the tropics it disappears altogether; its disadvantages, indeed, in such operations as ovariotomy are very great, so that of late an eminent American has used the nitrous oxide to avoid the vomiting and subsequent sickness and collapse after ether. It is the result of steady observation in large hospitals like Guy's, as mentioned by Mr. Bryant, that in many forms of collapse, sickness, 'shock,' chloroform acts as a stimulus. This was the general impression, too, in the surgery of terrible gun shot wounds in the Crimea; ether is only of use in a separate inhaler, not mixed where patients preferred it; but very unsafe where there is shock, especially shock from hæmorrhage. No doubt, by avoiding hæmorrhage cases, or those about the throat or face, and using perfectly pure washed ether, we may succeed with it. Marked fatal cases from ether are cited by Velpeau during the removal of tonsils; other cases of a like kind by Barrier of Lyons, M. Legouest, Dr. Alonzo Clarke, Bellevue Hospital, so that we cannot always rely upon its absolute safety. Authentic deaths from ether in England were published so early as 1847 by Snow, and Sabarth in his work refers to thirty-six accidents of this kind; the danger seems in the epileptoid stage, but the death is slower, like coma or deep intoxication. In the subsequent saturation of the system by the ether it attacks the fatty tissues, judging by experiments on animals.

"In fine, as to operations on tonsils, in midwifery, in 'shock,' in cases of hæmorrhage, in eye cases, where I had the best opinions at the Ophthalmological Congress, quite in opposition to Dr. Joy Jefferies, in old people, in children, ether is of very dubious importance. Then the difficulty of procuring in country villages perfectly anhydrous ether, its cumbrousness, the danger of decanting it in close surgeries at night, its unsatisfactoriness in 'mixtures'—are all deserving of consideration, or being placed in contrast with its undoubted advantage of less sudden accidents, though these have been suppressed."

Of other anæsthetics the experience of Dr. Kidd is varied; thus he says in the *Student's Journal and Hospital Gazette*, April 26th:—

"The bichloride of methylene has been tried extensively in short operations like the nitrous oxide. Syncope, with paleness of face (not lividness) is most to be feared in the administration. A trial has been made at Padua. Frightened at the English reports of death by chloroform, Rossi, chief surgeon of that city, had the former specially prepared, and tried it in 108 operations. Eighty-four presented nothing more than if under chloroform; thirty-two were excited, four violently so; twenty minutes required for the inhalation; twenty resisted it (absolument refractaires après quarante minutes); eight had severe vomiting. It produces tears in the glands of the eyes, but not cough. The patient remains comatose or asleep half an hour after the operation. Its greater safety, especially in these cases, recommends it in Italy, but several deaths from it have occurred in England.

"I have described its superiority to the gas in cataract operations, especially so in glaucoma. It is scarcely accurate to compare it with chloroform, as it is given nearly pure for short operations like eye cases in a different manner from chloroform. The leading eye surgeons object to the lividness and 'strangulation.' The nitrous oxide has proved safer in dentistry practice than chloroform, though inadmissible in eye surgery from the violent action of the face and its muscles. Here the methylene (applied differently from chloroform), especially in glaucoma, is found serviceable. The various chlorodynes, or, as we would term them from the Greek adverb, (choris, without) choridynes, absence of pain, with the chloral syrup, will also supersede chloroform in delirium tremens, mania, convulsions, spasmodic pain, &c."

As to the effect of sensational alarm, nature of operation, age, sex, &c., Dr. Kidd makes the following suggestive remarks:—"The literature of anæsthetics at present is about as blank and disorderly as the literary decisions of the Educational Council. Present conjoint effort has been to prevent irrational outcry against chloroform till men come to understand it better. A surgeon in China was put in prison last year as a death from chloroform had happened to him in an operation! There, in prison, for what I know to the contrary, he remains still! The same sad verdict of malpraxis was proposed in Ireland this year in a like case by 'crowner's quest law,' but a friend having sent us the newspaper report, by dint of ridicule it was laughed down. Fruits of the literary forcing-house, so fair outwardly, but so flavourless; the big mushroom idea of the fatty heart in forty-five of fifty of Snow's cases; the serious necessity of a formal heart examination; had all been brought before the police in alarming depositions and interrogations. But the danger, as already hinted, is rather in this frightening of patients; the heart is not such a perfect guide as formerly believed; our effort rather to realize the exact bearing of emotion, shock, nervous temperament, in such cases.

"Snow, too, has made a remark exactly the reverse of this, as to fatty heart. This imprisoned surgeon, and trial lately in the Channel Islands, and one not long ago at the Old Bailey, with about a dozen others in America, are the standing shame of our medical publishers: nor do we improve, we rather go back.

"We dwell with no pleasure on these popular misgivings; false impressions as to Snow's statistics; advertising dentists' harsh and continuous condemnation of chloroform; trade notions from America as to not one single death from ether; all things against which the student must be on his guard.

"We would direct attention to the following new facts as bearing on these 'stages,' and the character of the operation most dangerous. Of 259 deaths, tabulated by Snow and others, more than 80 per cent. were what one would call trivial small operations, on fingers, toes, eye cases, dentistry, &c., where patients are imperfectly anæsthetic. There have been no deaths in ovariotomy, midwifery, large capital operations, and the like.

"As an approximate idea of the stages in which death is most frequent, we find in 116 accidents 88 before operation at all, in the second

stage; or, in the panic, halfway through an operation, and only 28 after operation: and, as to sex, of 70, in a return by Registrar-General, the males were 55, the females 15; the fatal age 30. And yet some say age, sex, nature of operation, 'stages,' &c., are nothing."

Art. 104.—*On Cod-Liver Oil.**

By M. Decaisne.

(*Archives Générales de Médecine*, Février, 1873.)

M. Decaisne gives the result of his observations on the action of cod-liver oil in twelve cases of rickets, thirty-nine cases of scrofula, and fifty-two cases of phthisis:—

The oil acts, according to the author, as an antiseptic and reconstituent; it has curative properties in rickets, but does not produce a cure either in scrofula or phthisis. When given within a certain limit it increases the weight of the body, and may carry it even beyond the normal degree. By increasing the dose, however, the weight of the body may be diminished, in consequence of digestive disturbance.

Cod-liver oil should not be administered when there is any fever. The most opportune time for its administration is during a meal, so that it may be acted upon by the gastric and pancreatic juices.

Art. 105.—*On the Uses of Hemlock, in Relation with the Scepticism which now prevails on the Value of Drugs.*†

By Henry Kennedy, M.B., F.K.Q.C.P, Physician to Sir Patrick Dun's Hospital, and late Physician to Cork Street Fever Hospital.

(*Medical Press and Circular*, February 5, 1873.)

That hemlock is a drug possessed of great powers the author cannot doubt. It seems to act as a general restorative, and when the proper dose is reached the patient begins at once to improve. They gain flesh and even colour, and so the disease is cured. If, however, we wish to get its full effects, Dr. Kennedy agrees with Harley that it must be given in what he calls the physiological dose. Dr. Harley seems chiefly to have used the succus conii of the British Pharmacopœia, and a very elegant preparation it is; but it has this objection, and more particularly with children, that one third part of it is spirit. To avoid this the author has latterly been in the habit of directing the extract made into a mixture, and by a very little management a very palatable mixture can be made, to which children will rarely object. The flavour of the hemlock itself is not, however, by any means unpleasant, being very like

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* Communicated to the Académie des Sciences, Paris.

† Read before the Surgical Society of Ireland.

indeed to that of liquorice ball. With some few individuals, but they are very exceptional, the hemlock does not agree; it makes them sick. Details of two or three cases are given to show the effects of this medicine.

Dr. Kennedy has given it in a number of cases of chronic disease of the lungs, such as phthisis and asthma, with chronic bronchitis, and though nothing of a cure was to be expected in such cases, yet it was remarkable, he says, how much the greater number were benefited; indeed, so much as to be able to leave the hospital in a very short time. In many cases of neuralgia the hemlock will cure the disease, but not in all.

Art. 106.—*On Hyoscyamine.**

By Dr. Oulmont.

(*Archives Générales de Médecine*, Décembre, 1872.)

The author of this contribution has arrived at the following conclusions:—

1. Hyoscyamine represents all the active principles of henbane. The fixity of its composition gives to its employment a precision which does not attend henbane in substance.

2. Hyoscyamine ought to be administered at first in small doses (2 milligrammes daily), either in pills or by hypodermic injection. The daily dose may be gradually increased to ten and even twelve milligrammes.

3. This medicinal agent should be continued even if it give rise to slight symptoms of poisoning, as dryness of the throat and dilatation of the pupils. But if the symptoms should become serious and cerebral affections be produced, it would be necessary to suspend it. These symptoms, however, are temporary, and rapidly disappear.

4. On man hyoscyamine exercises a narcotic action. It is efficacious against pain, especially when of a neuralgic character, but its efficacy is less than that of opium and belladonna.

5. Hyoscyamine acts favourably against spasmodic and convulsive neuroses. It will often cure mercurial trembling after every other treatment has failed. In senile trembling also, and in paralysis agitans hyoscyamine has produced more amelioration than other medicinal agents.

6. Its action in cases of locomotor ataxy is negative. In one case of traumatic tetanus, which, however, was fatal, it determined a marked remission of the symptoms.

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* Communicated to the Académie de Médecine.

Art. 107.—*Effect of Stimuli on the Secretion of the Parotid Gland.*

By P. B. Stoney, M.D.

(*Journ. Anat. and Phys.*, November, 1872.)

Dr. Stoney took advantage of the opportunity afforded by a patient who was admitted into St. Bartholomew's Hospital with a parotid fistula of long standing, to make some experiments on this subject:—

"These experiments show (1) that mastication alone stimulates the flow of saliva from the parotid to a considerable extent. (2) That the effects of taste vary with the sapid substance, sugar having no effect, while tartaric acid acts most powerfully. (3) That sapid substances act equally when applied to the tip and base of the tongue. (4) That the effect of mastication and taste together is much greater than that of mastication alone. (5) That mental stimuli had a considerable effect in one experiment, but in others none at all. These results accord in some respects with those obtained by Schiff in his experiments on dogs, though differing from them in others. This physiologist observed that mastication alone had little or no stimulating action on the parotid secretion in dogs, and Dr. Brunton informs me that he has found this to be the case also in rabbits, while in the experiments above described the action was very distinct. The effect of the application of sugar and tartaric acid to the tongue of dogs was the same as that observed by me. The slight effect of purely mental stimuli in this case is remarkable, as the parotid is stated by Kühne to be readily affected by them, but this may have been due in great measure to the character of the patient, who seemed to be dull and unimaginative. An experiment was also made for the purpose of determining the time required for the absorption of drugs and their excretion by the saliva. For this purpose iodide of potassium was administered, and the saliva constantly tested till it appeared. The time which elapsed between its administration by the mouth and its appearance in the saliva from the parotid duct was found in one experiment to be 29 minutes 30 seconds.

Art. 108.—*On the Therapeutical Action of Bromide of Potassium.*

By Dr. Auguste Voisin,

(*Archives Générales de Médecine*, Février, 1873.)

Bromide of potassium acts in two different ways, and the physician, if he wishes to succeed with this medicinal agent, ought to conform to this double physiological datum.

It has a sedative action on the spinal cord and on the medulla oblongata, and a constrictive action on the muscular fibres of the capillaries so as to produce anæmia of organs and tissues.

By the former action is explained the efficacy of bromide of potassium in all morbid conditions in which the cord and the medulla oblongata

are more or less excited—that is to say, to mention only the principal affections, in cases of epilepsy, chorea, tetanus, simple and traumatic, in spinal irritability of hysterical and anæmic patients, in painful paraplegia of nervous females, in pains and cramps of spinal origin.

On the other hand, it is useless in pains of peripheral origin, in gastralgia, and generally in all painful affections which have not a spinal origin.

By its constrictive action on muscular fibres of the capillary vessels it causes anæmia of tissues, and so may be employed with advantage in simple visceral congestive affections unassociated with neoplasia.

Neither this agent nor the bromide of ammonium cause any arrest of the morbid changes and symptoms in chronic diffuse meningo-encephalitis or in other inflammatory hyperæmia accompanied by inflammatory exudation, proliferation of connective tissue, and organization of new tissue.

It is to the constrictive action of the bromide of potassium on the vessels that is due the favourable results of this agent in cases of spermatorrhœa.

In consequence of this action bromide of potassium diminishes most of the secretions, especially the buccal and pharyngeal, and probably the gastric secretions. Its action on vaginal secretions is also very rapid. Two or three doses each of one gramme will remove a simple leucorrhœa.

Art. 109.—*Clinical Remarks on the Resina Copaibæ as a Diuretic.*

By Samuel Wilks, M.D., F.R.S., Physician to Guy's Hospital.

(*The Lancet*, March 22.)

Dr. Wilks speaks with the greatest confidence of the value of the resin of copaiba as a diuretic. The ordinary copaiba has long been known for its action on the kidney, and is occasionally used in dropsy, but the nauseous taste of the oleo-resin has almost forbidden its employment. The oil separated from the resin is officinal, and is often prescribed in gonorrhœa instead of the compound substance. It is thought that the oil acts more especially on the mucous membranes, and is therefore useful in affections of the bronchial, vesical, and urethral surfaces. If this be so it is equally certain that the diuretic properties reside in the resin. Dr. Wilks has found it very difficult for patients to take the ordinary pharmacopœial drug, and almost impossible to get general practitioners to sanction its administration in private practice; he therefore has substituted for it the simple resin, and finds it equally or more efficacious. He gives fifteen or twenty grains in mucilage and flavoured water three or four times a day, and has had numerous cases showing its marked diuretic properties. There is now in Guy's Hospital a man who came in with ascites, and who, after taking numerous other remedies, was ordered the resin. The amount of urine was at once doubled in quantity, and now, after a few days, the fluid has almost disappeared. Dr. Wilks says he has

lately had as a private patient a "drunkard builder," with cirrhosis of liver and enormous ascites, for whom he likewise prescribed the resin; a diuretic action was at once effected, and the dropsy quickly disappeared. In heart cases also he has given it with great success. Lately there was in the hospital a girl with mitral disease and considerable dropsy, who took the usual medicines without effect, and was then ordered the copaiba. It at once produced the desired result, and the fluid was dispersed. Dr. Wilks states that he has often given the remedy and failed; but, on the other hand, when it has succeeded the result has been more striking than that arising from any other diuretic he has seen. He would wish it were placed in the Pharmacopœia, as it is not kept by chemists, although he is informed that it is used largely by perfumers, and the resin thrown away in large quantities as a waste material.

Art. 110.—*New Mode of Treatment of Functional Dyspepsia, Anæmia, and Chlorosis.*

By E. Brown-Séquard, M.D.

(*Archives of Scientific and Practical Medicine*, Jan. 1863.)

The following mode of treatment, proposed by Dr. Brown-Séquard, for some cases of dyspepsia, chlorosis, anæmia, and nervous affections caused by gastric disturbances or poverty of blood, has the merit of novelty. It "consists in giving but very little of solid or fluid food or any kind of drink at a time, and to give these things at regular intervals of from ten to twenty or thirty minutes. All sorts of food may be taken in that way, but during the short period when such a trial is made, it is obvious that the fancies of patients are to be laid aside, and that nourishing food, such as roasted or broiled meat, and especially beef and mutton, eggs, well-baked bread, and milk, with butter and cheese, and a very moderate quantity of vegetables and fruit, ought to constitute the dietary of the patients we try to relieve. This plan should be pursued two or three weeks, after which the patient should gradually return to the ordinary system of eating three times a day.

"It is hardly possible to give more detailed rules as regards this hygienic mode of treatment. On the one hand I have found few persons willing or able to follow it fully. On the other hand, many patients, especially those who have no dyspepsia, do not need to take so minute an amount of food at a time. Besides, it is certain that the quantity of food required varies notably in different persons. Prof. John C. Dalton states that the entire amount of food per day needed by a man in full health and taking free exercise is: of meat, 16 oz. av.; bread 19 oz.; fat, $3\frac{1}{2}$ oz.; and of water, 52 fl. oz.—*i.e.*, about $2\frac{1}{2}$ lbs. of solid food, and rather more than 3 pints of fluid. According to Dr. Edward Smith and other European hygienists, the amount of solid food and of water required each day is notably larger than that marked out by the able American physiologist I have named. My experience with the patients on whom I have tried the plan of feeding above mentioned, shows that the amount of solid food required by an adult is nearly

always as follows: from 12 to 18 oz. of cooked meat, and from 18 to 24 oz. of bread. As regards the quantity of fluids I have allowed, it has always been notably less than the amount indicated by Dr. Dalton (3 pints), and by Dr. E. Smith (4½ to 5 pints).

"I hardly need say that in carrying out the plan I propose attention must be paid to three points: 1st, the liking and disliking of certain things by the patient. 2nd, the importance of variety in food. 3rd, the digestibility of certain things compared with others—digestibility which varies immensely in different patients. When I found that there was no disgust for a meat and bread diet I ordered that roasted beef or mutton, with bread, be almost the only kinds of solid food taken. But most patients were either soon disgusted with this diet or refused even to try it. Having ascertained this I allowed the selection by each patient of his own dietary, insisting, however, that the quantity of cooked meat should be at least 12 oz. a day. The most varied diet, as regards the kinds of food, can be followed, however, under this plan as well as when one has only two or three meals a day. The only absolutely essential points are that the amount of food taken every 10, 15, 20, or 30 minutes be very small (from two to four mouthfuls), and that the quantity of solid food in a day be from 32 to 40 oz., or a little less when, instead of water, the patient drinks beef-tea or milk."

Art. 111.—*On the Action of Rhus Venenata and Rhus Toxicodendron upon the Human Skin.*

By James C. White, M.D., Professor of Dermatology in Harvard University.

(*New York Medical Journal*, March, 1873.)

The author contributes a very interesting paper on the so-called poisonous action produced upon the skin of persons touching or approaching either the *R. toxicodendron* (popularly called poison-ivy, poison-vine, poison-oak), or the *R. venenata* (commonly known as poison-sumach, poison-dogwood, poison-elder, poison-ash).

Writers have generally regarded the inflammatory affection of the skin provoked by contact with plants or their emanations as of an erysipelatous nature. Dr. White combats this opinion as erroneous, and says, the "observation of a few cases, as they present themselves in the practice of every physician, will satisfactorily establish the changes in the skin to be simply of an eczematous nature, although of so severe a type, in some cases, as to produce quite as marked deformity of parts as true erysipelas." In the many cases which Dr. White has observed he has found that in all the pathological changes of the skin were identical, differing only in degree of intensity and extent of distribution.

In a mild case we find a slight erythema surrounding a papule or vesicle, with a small underlying infiltration or exudation. These are all the phenomena observed, whether we have a single efflorescence or several individuals grouped together. Dr. White agrees with Prof.

Maisch that toxicodendric is the principle to which the poison-oak owes its effects on the human system, and frames his therapeutics accordingly. "We have to deal with an acid, and the antidote for an acid is an alkali: that is, provided the salts thus formed are not equally poisonous." Whether the salts formed with toxicodendric acid by ammonia, potash, and soda are poisonous, Prof. Maisch is in doubt; but, speaking clinically, he leads us to believe they are not, for he says that the application of solutions of ammonia seemed to be most effective in counteracting the action of the acid. This is consistent with the popular reputation of solutions of saleratus and soda as remedies, and will explain the action of the soft-soap above-mentioned. These are true antidotes, but they can be of benefit only from their chemical action, and in this way. In the later stages, or, in other words, against the subsequent eczematous changes in the cutaneous tissues, they can do no good. The action of that most popular of all remedies in this affection, the solution of sugar of lead, is a mixed one, and seems to have been happily, though unwittingly, selected as an appropriate remedy in all stages. Toxicodendric acid precipitates from it an insoluble, and therefore harmless salt, while its astringent action is well adapted, in many cases, to the relief of the inflammatory processes in the skin.

"The treatment of the later stages of rhus-poisoning, that is, of the eruption it produces, need not be especially considered, for it is mainly that of the corresponding varieties of ordinary acute eczema. It is seldom that the physician is called upon before the inflammatory process is well developed, so that there generally remains for him only the selection of the applications appropriate to a simple eczema of the same stage. In the great majority of cases I have found black-wash—calomel ʒj, lime water Oj—by far the best application to the affected parts, used as an evaporating lotion upon thin and old linen or cotton cloth, for half an hour to one hour at a time, two or three times a day. I have used in connexion with it, to moist or excoriated parts, a powder of oxide of zinc ʒj, starch ʒj, or plasters of oxide of zinc or diachylon-ointment, as in the management of ordinary eczema. In the black-wash we have, possibly, three elements at work in our favour: first, the alkali as antidote, if it is of any avail at such periods; second, the action of cold from evaporation upon the local hyperamy; and, third, the astringent effect of the mercurial powder upon the diseased tissues. In all cases of poisoning I have been entirely satisfied with its effects, however extensive in distribution or advanced in development the inflammatory condition of the skin. Only upon the thickened epidermal coverings of the efflorescences in the palms does it seem ineffectual. To these tardy and well-protected manifestations I apply solutions of corrosive sublimate, from one to two grains to the ounce of water, in the same way as the black-wash is used upon the other parts. By these means the eczematous process is checked and shortened, and the subjective symptoms greatly alleviated.

"Of any internal treatment of direct bearing upon the affection, I have never seen the operation or need. A simple and restricted diet in severe cases is, of course, to be observed."

Art. 112.—*The Effects of Tension and Relaxation of Muscle upon Electro-Muscular Contractility.**

By William R. Fisher, M.D.

(*New York Medical Journal*, May.)

A series of experiments which Dr. Fisher has made, upon both healthy and paralysed muscles, have satisfied him of the truth of the following conclusions :—

1. That the relaxation of a muscle promotes its electro-muscular contractility.

2. That the stretching of a muscle diminishes its electro-muscular contractility.

The muscles of the forearm supply the most convenient and satisfactory means for demonstrating these facts. The extension and relaxation of these muscles can be regulated easily by changing the position of the hand; there is no difficulty in isolating the particular one which we may wish to subject to the electrical current, nor is there likely to be any interference with the result from the presence of an obstructing layer of fat. The biceps and triceps brachii also answer very well. Muscles having broad origins or insertions, such as the deltoid, for example, are not good subjects for experiment, because in altering the position of the limb, so as to extend or relax the muscle, the position of the electrodes is unavoidably changed, and fibres are brought under the electrical current other than those upon which the experiment was commenced, and the result is vitiated. Dr. Fisher has found also that the fleshy mass of the thigh is unsuitable, partly on account of the difficulty of isolation which has been referred to, and partly on account of the resistance offered by the adipose and fibrous tissues. In one case upon which he experimented, the results which he had expected to accomplish were directly reversed; *i.e.*, when the quadriceps extensor cruris was relaxed, the electro-muscular contractility was not so great as when the knee was bent and the leg hung pendent. This was to be attributed, it is believed, mainly to the layer of fat which lay between the electrodes and the muscle, and which offered a greater resistance to the passage of the current when the tissues of the thigh were relaxed than when they were rendered tense by extension.

In experimenting upon healthy muscle, Dr. Fisher adopted the following method of procedure :—Suppose that the muscles on the dorsum of the forearm were chosen as the subjects for investigation. The hand was extended strongly so as to relax them as far as possible. One electrode was placed near the external condyle, and the other about midway down the forearm, so as to include between them a portion of some one of the muscles of the region. The current was reduced in strength until it reached the minimum point at which muscular contraction could be distinctly perceived by the finger of the observer, placed between the electrodes. Then the hand was carried by the observer from the position of extreme extension to that of extreme flexion, and

* Read before the Electro-Therapeutical Society of New York.

in this change of posture the electro-muscular contractility was invariably found to diminish, and, if the current were not too strong, to become entirely imperceptible. This effect was reversed by restoring the hand to the position from which it started. Dr. Fisher has obtained these results in numerous instances, both with the interrupted galvanic and faradic currents, applied directly to the muscles, and also with the galvanic nerve-muscle current, interrupted; but the faradic current gives a more distinct and positive demonstration than the galvanic, by reason of the more decided muscular contractions which it produces.

The electrodes should be about an inch in diameter. If much larger, they include too great a mass of muscular fibres, and the accuracy of the observation may be interfered with. A distance of four or five inches between them should be maintained, so that the contractions may be easily made out with the finger. The strength of the current should be carefully reduced to the point which has been indicated, because, when powerful currents are used, the variation in the force of the muscular contractions, which is occasioned by the change from a state of relaxation to that of extension, and *vice versâ*, is not sufficient to be appreciated by the sense of touch.

Three causes which act in modifying the normal electro-muscular contractility and sensibility have previously been established—the anatomical relation of individual muscles, the quantity and distribution of the sensitive nerves, and the thickness of the skin and adipose tissue. To these must be added the mechanical element of tension.

The experiments upon healthy muscles followed an observation which the author recently made upon a case of hemiplegic paralysis, attended with marked muscular atrophy. Dr. Fisher was trying to distinguish muscular contraction in response to a mild faradic current, which he was passing through the biceps brachii muscle, and, as he watched closely, without having perceived any signs of it, the patient bent his elbow at a right angle, by carrying his forearm up with his unaffected hand. Immediately the biceps contracted very decidedly to the interruptions of the current. The patient was directed to let the forearm fall again, and at once the contractions ceased to be apparent. This has been repeated frequently with the same patient, and like results have been obtained in other cases of a similar nature. In two cases of lead-paralysis, the galvanic current has given analogous results in the muscles of the forearm. Dr. Fisher states that, if there be extreme atrophy in a case of palsy, the observer may not be able to distinguish by touch or sight these effects of the changes in muscular tension, by reason of the feebleness of the contractions to the electrical stimulus in the attenuated muscles.

The therapeutic indications of this method of electrization seem to Dr. Fisher to point to many forms of paralysis, and especially to those which present the changes of atrophic degeneration. In lead-paralysis, for example, where the extensor muscles are more affected than the flexors, and the electro-muscular contractility varies in each group with the amount of palsy, the nutrition and growth of the less powerful may be hastened by placing them in the position of complete relaxation during the application of the faradic or the galvanic current. And, generally,

where the electro-therapeutic seeks to stimulate muscular growth, and at the same time to avoid fatigue and exhaustion in the feeble muscles which he treats, this plan, which takes advantage of position to facilitate the action of electricity, must commend itself.

Art. 113.—*Laurel Leaves as a Febrifuge.*

By M. A. Doran.

(*Pharmaceutical Journal*, December 21, 1872.)

M. A. Doran has communicated a note to the French Academy, recording the febrifuge and antiperiodic properties of the leaves of *Laurus nobilis*. The green leaves are prepared by drying them at a gentle heat in a closed coffee-roaster, to avoid the loss of the volatile constituents, until they become brittle, but without undergoing any alteration. They are then reduced to a fine powder, of which one grain macerated in a glass of cold water for ten or twelve hours, is administered as a dose.

Art. 114.—*Phytolacca Decandra in the Treatment of Inflammation of the Mammary Glands.*

By G. W. Biggers, M.D., of La Grande, Oregon.

(*American Journal of the Medical Sciences*, January.)

The following cases are stated as the *result of the author's experience* only with the remedy in question.

Case 1.—Mrs. H.: on third day after labour with her second child, mammæ commenced swelling, from an accumulation of milk. Dr. Biggers did not see her until the symptoms were so urgent that there could be no mistake about the commencement of an abscess.

He pursued the antiphlogistic treatment, both general and local, until there was no promise of improvement; the case was in fact getting worse. He then prescribed fluid ext. phytolacca decandra, gtts. xx, every three hours, in water. A very marked improvement took place in twelve hours, and in thirty-six hours the patient was well. There was also a suppression of the lochia, which was also re-established.

Case 2.—Mrs. B., whose child died a few hours after its birth, was attacked, after the secretion of milk took place, with inflammation of the mammary glands, from overdistension, and had the milk withdrawn very regularly, yet the case continued worse, threatening an abscess. The fluid ext. phytolacca decandra, gtts. xx, was prescribed every three hours. Marked improvement in ten hours, and a complete recovery within thirty-six hours. There was also a suppression of lochia in this case, which was re-established with the cessation of the mammary inflammation.

Case 3.—Mrs. G., at the fourth month of pregnancy, was attacked with inflammation of both mammæ, severe pain, swelling, and very great heat, with severe rigors, amounting to a distinct chill. Dr. Biggers prescribed fluid ext. phytolacca decandra, gtts. xv, every three hours, in water. The symptoms all subsided, and the patient fully recovered within forty-eight hours with no other treatment.

The author has used the remedy above named in many other cases of mammary inflammation, and it has never yet failed in a single case.

The preparation used was Thayer's fluid extract. A tincture from the green root would, Dr. Biggers thinks, be more reliable.

Art. 115.—*On the Influence of Belladonna on Sweating.*

By Sydney Ringer, M.D., F.R.C.P.

(*The Practitioner*, August, 1872.)

Dr. Sydney Ringer communicates a short paper on the efficacy of belladonna, in ointment or liniment or hypodermically, in checking sweating, local or general. He was led to try the influence of belladonna on sweating from its remarkable action in checking the secretion of milk. He first employed it "in a case of unilateral sweating. A man, forty-five years old, had been troubled for many months with profuse sweating of the right side of the face and neck, breaking out on the slightest exertion or excitement, or when near a fire, so that the sweat ran down his face and neck in streams, soaking his collar and the band of his shirt, his face being neither red nor congested. The perspiration produced an abundant crop of miliary vesicles, which were strictly limited to one-half of his face. The liniment of belladonna applied two or three times a day abated this copious sweating considerably, and reduced it to a little more than the natural amount, and this improvement lasted about six months after the discontinuance of the application, and then the sweating gradually returned, till it became as bad as ever.

The writer has many times checked the sweating of the head and face of young children, often so profuse as to soak their hair and the pillow on which they have been sleeping. Again, by means of the belladonna ointment or liniment rubbed in two or three times a day, he has several times checked the profuse sweating of the hands, which is sometimes so copious as to run off them in drops, and is especially noticeable at the finger-tips and thumb-balls. Sometimes the good effects are permanent, sometimes the sweating may not return for a considerable time; but occasionally, however, this treatment fails.

Art. 116.—*On the Treatment of Trembling by Arsenical Hypodermic Injections.*

By Dr. A. Eulenburg.

(*Berliner klinische Wochenschrift*, No. 46, 1872; *Gazette Hebdomadaire*, No. 49, 1873.)

The author, from a therapeutical point of view, collects in one group senile, alcoholic, and mercurial trembling, also the trembling of paralysis agitans, and of the various sclerotic affections of the central nervous system; finally, cases where trembling represents the unique symptom of the hysteria agitans of Sanders. Whatever be the cause of the trembling, it may be admitted that the phenomena in itself is in part due to an abnormal excitability of the motor nervous apparatus, in part to an abnormal excitation of this apparatus, proceeding from the periphery, from the centre, or by reflex or sensorial courses. One may therefore conceive of the possibility of finding a medicinal agent which in cases of trembling may diminish the excitability or excitation. Curare, which has already been tried, does not give good results, and bromide of potassium does not produce sufficient effects. Arsenic is a more promising remedy.

This last agent acts upon those parts of the spinal cord which conduct the sensory impressions, and destroys their function, whilst it leaves intact the excitability of the motor nerves and of the muscles. As trembling has most frequently a spinal origin, it seemed to Dr. Eulenburg a rational proceeding to apply arsenic in the treatment of this phenomenon.

The plan of treatment adopted by the author is based on the employment of arseniate of potash or Fowler's solution injected under the skin. Dr. Eulenburg endeavoured thus to avoid the irritant action of arsenic on the stomach, which action is manifested by gastralgia and loss of appetite.

Dr. Eulenburg employs for his injections a solution of one part of fluid arseniate of potash to two parts of distilled water. He injects a dose of this solution equivalent to between 14 and 20 centigrammes of fluid arseniate of potash—a very large quantity, if one compares the activity of hypodermic injections with that of doses administered by the digestive canal. Injections made in the neck or back never cause abscesses; the pain is very slight.

The cases treated by the author in this way were seven in number. In one case twenty-eight injections were practised in seventeen days; at first they produced an increase of the trembling, but the ultimate result of the treatment was most satisfactory. In another case the trembling was relieved after the fifth injection. In one of the other cases presenting a great resemblance to paralysis agitans, fifteen injections produced cessation of the trembling; in the other, four injections brought about considerable amelioration.

Dr. Eulenburg reports other cases in which this treatment was employed without producing any results. This plan of treatment, then, is still under trial; all the reports of these cases seem to prove the freedom from bad results of arsenical injections.

Art. 117.—*On the Use of the Direct and Induced Electric Currents in Medicine.*

By Walter G. Smith, M.D.

(*Irish Hospital Gazette*, January 1.)

At a meeting of the Medical Society of the College of Physicians, Dec. 11, 1872, Dr. Walter G. Smith read a paper on the above subject. After some introductory observations, attention was drawn to three groups of paralysis—viz., Bell's palsy, local traumatic paralysis due to pressure or other injury, and paralysis from lead.

Five cases of Bell's paralysis were related in illustration of several points in the relation of the palsied muscles to the direct and induced currents respectively, and a summary of the principal results observed was given. Two cases of traumatic paralysis, due to compression of the nerve during sleep, were quoted, both rapidly yielding to induced electricity; and two cases due to a more serious injury of the nerve—in one, by a bullet wound in the left arm; and in the other, by a fall against a stone step on the outside of the right knee. In the former case, induced electricity failed to stimulate the palsied muscles to contract; but a galvanic current, from fourteen (Leclanché) cells, caused distinct contractions, and, after a few days, nine or ten cells. In the latter case, the motility of the paralysed muscles was quite extinguished, and excitability to either the direct or the induced current seemed at first completely lost. But by degrees the muscles began to respond to a *slowly-interrupted* galvanic current, and after perseverance for a considerable time motility was thoroughly restored, and faradic excitability had nearly returned. On the subject of lead palsy it was remarked that the gravity of the paralysis seems to bear no constant relation to the degree of muscular atrophy, and the author expressed his conviction that the statement commonly made in the text-books, that the extensors only of the wrist are engaged, and that the corresponding flexors escape entirely, requires some modification. On the contrary, it is sufficient to test the grasping power of the hand, to feel the flabby condition of these muscles, and to observe their atrophied state and the diminution of electro-contractility which so frequently obtains, to be convinced that the dictum that the flexors escape the poison of lead is only relatively true.

Art. 118.—*On the Use of the Constant (Voltaic) Current in Pains of a Pelvic Character.*

By William Stephenson, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo. Pp. 455. 1872.)

In this paper Dr. Stephenson observes:—

"One of the most important questions in practical medicine at present under discussion is that regarding the influence of the constant

current of electricity over pain. Having used the constant current for two years in a large number of different affections, I would lay before you the result of my experience in so far as it relates to certain classes of cases which come more directly within the domain of this Society. The first class to which I would refer is the sacral and iliac pains which are met with so frequently in practice. Many of them are purely neuralgic, others muscular, while some are a combination of both forms. Their connexion in a large number of cases with some abnormal condition of the pelvic organs is undoubted, but it is no less true that they often persist long after the primary local cause has disappeared.

"The difficulty which we have had hitherto to contend with is that we did not possess the means of acting directly and locally upon the weakened state of the sacral nerves, which is the true cause of the suffering, or determining the relations between the pain and the pelvic change. Here, however, the constant current of electricity steps in. Its effect in alleviating pain affords immediate relief, and by its restorative influence gradually removes the affection, while in it also we have the means of determining how far any local mischief is acting as an exciting cause. In some cases where a cure cannot be looked for, great relief to suffering can be given more quickly and with better effect than by the use of anodynes."

Here follow reports of eleven typical cases in proof of the effects claimed.

1. Rupture of perineum; prolapsus uteri; cervix short, with os directed forward; pain in the back and left iliac region for nearly three months, with bearing-down sensation, much increased during the last two weeks.

"A direct current from twenty-five cells was passed through the region of pain for five minutes. The pain in the side was at once relieved, and she felt only a slight uneasy feeling in the back on stooping. Next day the improvement continued; she felt no pain, but a weary feeling in the back and limbs. . . . . The pains, however, returned at times, but never to such an extent as to inconvenience her.

"There are many cases of backache which have their origin in the irritation of the menstrual period, but where a proneness to fatigue in the lumbar muscles renders the affection more or less permanent. Otherwise they are unassociated with any uterine ailment. An error in diagnosis, however, may be readily made, and it is easy by a leading question to get some acknowledgment of the vague term *down-bearing*. Their real nature is muscular fatigue."

The influence of the constant current is to restore tone to the muscles.

"To obtain these results, what is wanted is not a current of great intensity, but one with a large quantity of electricity of low tension, and twenty-five Daniels' cells are sufficient for ordinary cases. The mode of application I adopt is by two large surface sponge conductors, the one placed over the spine, and the other on the iliac regions and the inner side of the thighs. I have tried the direct applications to the uterus by a vaginal conductor, but I did not find any well-marked advantage over the external method, and it is much less agreeable to the patient. Each application should last five or ten minutes, and the direction of the current should frequently be changed during the sitting."

Art. 119.—*On the Disposition of the Poles of Continuous Currents in certain Forms of Myelitis.**

By M. Onimus.

(*Gazette Hebdomadaire*, No. 5, 1873.)

It has been established by MM. Legros and Onimus, as a general rule, that descending continuous currents applied to the spine diminish the medullary reflex actions in cases of myelitis, and that ascending currents increase or favour the reflex actions. In other terms, it is necessary to place the positive pole on the nape, and the negative pole lower down on the spine.

To this rule there are exceptions, and it has been found from practice that the wished-for sedative effect cannot always be obtained. M. Onimus thinks that these exceptions can be accounted for; in fact, in a case of myelitis affecting the middle portion of the cord, one may attain with descending currents effects differing much according to the distances of the two poles.

If the positive pole be placed on the nape, and the negative pole over the dorsal portion of the spine, but above the presumed seat of the myelitis, the current will have a sedative action, the reflex actions being diminished, and the general rule confirmed. On the other hand, if the negative action be applied to the lumbar region, that is to say above and below the lesion, the positive pole being again applied to the nape, the current, far from calming the reflex actions, may excite them.

The physiological explanation of this fact is as follows: in the second proceeding the lesion interrupts the descending transmission along the cord from the positive to the negative pole, while the negative pole excites directly the segment of the cord situated below the lesion.

Art. 120.—*The Action of Mercury.*

By Robert Farquharson, M.D.

(*British Medical Journal*, February 8.)

Dr. Farquharson states that he is reminded by the unfortunate idiosyncrasy of a case recorded by Dr. Cheadle, of one in which severe symptoms were produced by a very small dose of mercury.

A relative of his own spent many years in the West Indies, and was treated there for fever, according to the fashion of the day, with almost incredible quantities of calomel. Ever since that period she has been so susceptible to the action of the drug as to find it necessary, when consulting any fresh medical man, to lay her peculiarities in this respect fully before him. On arriving in London, however, she was seized with what is popularly called a bilious attack; and, unluckily forgetting to make her usual stipulation, the doctor in attendance naturally enough

* Communicated to the Société de Biologie, Paris.

prescribed a couple of pills containing three grains of calomel and five of colocynth. Furious salivation almost immediate set in, with marked gastric disturbance and general debility; and several months elapsed before either her gums or her strength were restored to their normal condition. This lady's daughter exhibits an almost equal intolerance of mercury in any form; and Dr. Farquharson is thus led to infer that prolonged residence in a tropical climate may serve to encourage, if not actually produce such a type of constitution.

It is also known that debility has a decided tendency to cause excessive action of this therapeutic agent. Of this Dr. Farquharson remembers a typical instance, which occurred in the Coldstream Guards' Hospital some years ago; two privates having been salivated, one by three, and the other by two calomel vapour-baths, each containing twenty grains. This naturally excited some surprise, as the men were robust, and as such accidents rarely happened; but all became clear when it was found that they had inadvertently been kept on very low diet during the four or five days following their admission. The rectification of this error speedily put them all right; but the circumstance impresses forcibly the necessity of combining tonic diet and regimen with anything like a mercurial course. If the patients feed well, have a moderate allowance of stimulant, with iron or quinine, they will fatten and do well; whereas the semi-starvation enjoined by the dogmas of former days proved its fallacy by the results. With syphilis as the whip and mercury as the spur, patients went downhill with sad rapidity; and not a little of this must have been due to the debilitating influence of low diet.

M. Diday (*L'Histoire Naturelle de la Syphilis*) tells us to beware of the action of mercury in persons with light or reddish hair.

Art. 121.—*On the Arrest of Destruction of the Lung in Chronic Phthisis by the Inhalation of the Vapours of Oxygenated Essences.*

By Dr. Chéron.

(*Gazette Hebdomadaire*, No. 51, 1872.)

"1. The vapours of oxygenated essences, like the powders of these substances, have the property of arresting the destructive progress of phagedænism, and of favouring the reparation of obstinate ulcers of the cornea, &c. Nothing similar is to be obtained from non-oxygenated essences, of which the essence of turpentine is the type.

"2. The pulmonary caverns of phthisis, when treated by inhalation of these vapours, undergo cicatrization under the influence of this mode of treatment in a great number of cases and in a relatively short period of time.

"3. The expectorated material of all the patients treated in this manner was examined according to Fenwick's method. The presence of the elastic fibres, made out at the commencement, and their disappearance, made out at the end of the treatment, justify the employment of inhalation of oxygenated essences in vapour during the ulcerative period of chronic phthisis.

"4. The free vapours of these substances have but a very feeble tension, and consequently do not sufficiently charge the atmosphere of apartments in which they are allowed to spread. I have therefore in my attempts made use of a small vaporizing apparatus, constructed by M. Collin according to my instructions. This drives air saturated with the vapour into the bronchial tubes with more force.

"5. All the oxygenated essences may be employed with the chance of success. I have made use of the oxygenated essence of Japanese camphor, of camomile, of cedar, of eucalyptus or eucalyptol.

"6. I prefer the oxygenated essence of *laurus camphoræ*, the odour of which is less penetrating than that of the Borneo camphor. The oxygenated essence of cedar, the odour of which is agreeable and mild, is very well tolerated by patients.

"7. Intense continued fever, great debility, rapidity in the course of the disease, emaciation, all represent so many conditions unfavourable to the success of these inhalations.

"8. The mild and torpid form of phthisis, with partial conservation of strength, abundant expectoration, cough, and oppression, present conditions under which the inhalation of vapours of oxygenated essences give the best results.

"9. Under the influence of this mode of treatment the expectoration, cough, and dyspnœa are relieved, the appetite restored, the strength increased, the hectic fever reduced, and the weight of the patient raised. Finally, in a very great number of cases I have had the satisfaction of observing a disappearance of all the morbid phenomena and a restoration of the patient to good health.

"10. The employment of this means should not in any way contra-indicate the use of other medicinal agents, and of the usual régime, for it has no specific pretension. It avertst he pulmonary destruction, and allows the physician to utilize this remission to the advantage of the patient in combating by appropriate means the tuberculous diathesis.

"11. Here we have but the application of a property of oxygenated essences which has been well determined in recent times. One cannot see any point of contact between this with the unfortunate suggestions which have led some to regard camphor as a panacea, and have at the same time set many physicians against the truly rational employment of this therapeutical agent."

Art. 122.—*On Aspiration as a Therapeutical Method.*

By Dr. Hennequin.

(*Archives Générales de Médecine*, Décembre, 1872.)

"1. Aspiration is an old method, improved and generalized by modern practitioners.

"2. The object of aspiration is to evacuate through as small an opening as possible fluid, gaseous, or mixed collections.

"3. Aspirators, with regard to their mode of action, may be divided into four classes:—

"*a.* Mechanical aspirators (pneumatic syringe).

"*b.* Physical aspirators (aspirators of chemical laboratories; condensation of vapours).

"*c.* Chemical aspirators (absorption of gas or vapour by bodies having for the particular gas or vapour a special affinity, for example, the affinity of potash or lime for carbonic acid).

"*d.* Aspirators which may be called physiological (the mouth, caoutchouc bags).

"4. Aspiration cannot be practised in the treatment of collections within cavities having rigid walls, except the removed fluid be replaced by another fluid. If this be not done, the effect of aspiration is negative or dangerous.

"5. A fluid or gaseous collection may always be removed by aspiration when the coats of the sac are depressible, and their inner surfaces are capable of being applied to one another.

"6. The evacuation of a collection within walls endowed with but restricted mobility should be in relation with the mobility of the walls.

"7. The evacuation of a collection within rigid walls might be complete, if one of the walls be mobile or expansive (pleural cavity, moveable and expansive).

"8. The operation should be stayed when the surgeon finds that the walls of the cavity have reached the limit of their retractility.

"9. Gaseous collections may be discharged without the help of aspiration, which in these cases only hastens the evacuation.

"10. In mixed collections of fluid and gas, it is preferable to plunge the canula into the part corresponding to the lowest layer of the fluid.

"11. In pleural effusions aspiration obtains a continuous discharge, empties the cavity most thoroughly, and allows the recognition of pulmonary adhesions in cases of incomplete evacuation without obstruction of the canula.

"12. The motor agent in aspiration is atmospheric pressure—a pressure which is exercised not only on the surface of the body, but also on the deep-seated portions of organs.

"13. This pressure is sufficient to produce rupture of the vessels and consequently hæmorrhages. One can avoid these results only by affording support to the subjected organs. In this way aspiration may be employed as a depletive method.

"14. The collections which may be dealt with by aspiration have increased considerably since the making of recent improvements in the method. In order to obtain a successful result, however, it is necessary to determine the consistence of the fluid.

"15. Exploratory punctures of fluid tumours in the abdominal cavity should be made with very fine needles, and a portion of the fluid contents should be removed in order to diminish the tension of the walls of the sac.

"16. The entrance of air into the interior of collections submitted to aspiration cannot take place at the commencement. It is but under rare conditions that it can take place.

"17. Every aspirator is composed of a receiving vessel, needles and trocars, and an agent for withdrawing the fluid.

"18. The necessary vessel ought to be one of clear glass, proportioned as much as possible to the quantity of fluid in the collection, and furnished with a superior opening.

"19. The utility of the substitution of trocars for hollow needles is demonstrated by mathematics and physiology.

"20. Experience has demonstrated the necessity of giving at least three millimetres of internal diameter to the largest canula, and at the most one millimetre to the smallest.

"21. The most frequently employed agent for withdrawing fluid is the pneumatic syringe; hereafter this may be replaced with advantage by chemical means.

"22. The embarrassments often experienced by the operator in working several cocks has led me to devise an automatic apparatus with one cock.

"23. In order to do away with complications in the instrument, I have, through a particular arrangement of suckers, combined in one instrument the pneumatic syringe and the injection syringe.'

Art. 123.—*On the Prevention of Pitting after Small-Pox.*

By E. West Symes, M.B.

(*The Lancet*, May 25.)

Mr. Symes recommends as a local application to prevent pitting after small-pox, a mixture of one ounce of oxide of zinc to a pint of olive or linseed oil, which he has found most useful in a large number of cases. Mr. Symes has been in the habit also of keeping the room darkened.

Art. 124.—*On Choleate of Soda in the Treatment of Biliary Lithiasis.*

By Professor M. Schiff.

(*L'Imparziale*, No. 4, 1873; *Gazette Hebdomadaire*, No. 15, 1873.)

The following is a short analysis of an interesting communication from Prof. Schiff to Dr. Prospero Sonsino:—

The Professor deals with biliary calculi of the most common kind, that is to say, those formed by cholesterine united with a little mucus. It is possible, he states, that there may be an excess in the formation of cholesterine in the bile; but as we are quite ignorant of the origin of the cholesterine which is excreted by the liver, we cannot in any way state with precision the cause which may give rise to such an excessive formation. In general, it is on an excess of cholesterine in the bile that calculi depend; this substance is found in the first place in normal proportions; then it is deposited and forms concretions, because the bile contained in the gall-bladder does not contain principles which can dissolve the cholesterine or maintain it dissolved. It is upon this latter hypothesis, confirmed by numerous observations, that the new method of treatment proposed by Prof. Schiff is based; it has over the former the undoubted advantage of bringing to light a therapeutical indication which may prove salutary, whilst the former confines the practitioner to sterile inactivity.

It is known that cholesterine is soluble but in very few organic liquids, and among the substances contained in the human body the biliary salts (cholates and choleates of potash), dissolved in a slightly alkaline fluid, are those capable of dissolving a small quantity of cholesterine. It is probably the presence of these salts which holds the cholesterine of the bile in solution, and one may suppose that a diminution or a too great dilution of these salts would tend to cause precipitation of the cholesterine; since an absolute or relative diminution of these salts in the gall-bladder may determine the production of biliary calculi composed of cholesterine, an increase in the amount of these salts ought to prevent the precipitation of cholesterine and maintain it in a state of solution.

The dissolving power of these salts, however, is too feeble to justify the hope that one may, by increasing their quantity, redissolve the biliary calculi already formed, and which would be forcibly expelled. Still it may be believed that fresh deposits of cholesterine will not be formed so long as the biliary salts are maintained in the bile in excess.

Such is the basis of the treatment, of which the method is as follows:

Prof. Schiff recommends to his patients the internal administration of choleate of soda in doses of fifty centigrammes twice in the day. This dose is generally increased until the patient begins to feel the evil effects of the agent.

The phenomena of saturation are characterized by disturbances of the digestive and circulatory organs. The pulse becomes irregular; it is reduced during repose, and is much accelerated by the smallest effort and after the least exercise. In the face of these symptoms the employment of the medicinal agent should not be altogether suspended, but its dose diminished. The untoward influence of this plan of treatment is not observed until after a long interval, as the choleate acts slowly.

Art. 125.—*Methylene Ether as an Anæsthetic.*

By Lawson Tait, F.R.C.S., Surgeon to the Hospital for Women, Birmingham.

(*The British Medical Journal*, March 8.)

By the introduction of this new anæsthetic, Mr. Tait feels sure that the days of chloroform as an anæsthetic for any but obstetric operations are numbered. The new substance has the following advantages over chloroform. Its action is much more rapid, and is entirely free from the muscular and cerebral excitement often seen in the use of chloroform; the quantity used is less; and sickness after its use is most exceptional, the recovery from the anæsthesia being extremely rapid and complete. Over sulphuric ether it has the advantage that it is very pleasant to take, and that a tenth or twelfth of the quantity is sufficient.

Mr. Tait has used it about thirty times, and in only one instance was there any sickness, and in that case the lady had just before the administration been partaking freely of underdone mutton.

Art. 126.—*On the Therapeutical and Anti-putrid Properties of Silicate of Soda.**

By M. Champouillon.

(*Gazette Hebdomadaire*, No. 8, 1873.)

"Fetid pus derived from a phlegmonous abscess of the thigh, when treated by silicate of soda, coagulates and loses a great part of its odour.

"A concentrated solution of silicate of soda kills microphytes and microzoids, which seem to constitute the essence and the mode of propagation of the diseases called infectious. The same solution attacks and concentrates the mucus and albumen contained in organic fluids.

"In applying therapeutically the properties of silicate of soda, I have had occasion to make out the following results.

"As a topical agent, the solution of this salt protects the surfaces of wounds against the absorption of wandering mephitic substances. It purifies suppurations of bad character, and neutralizes the infectious element of cutaneous diphtheria resulting from the application of blisters in overcrowded hospitals.

"When used as an injection in cases of ozæna, a solution of silicate of soda disinfects the material furnished by the pituitary membrane, and diminishes its abundance; but in this respect its efficacy is inferior to that of permanganate of potash.

"An injection of silicate of soda sensibly diminishes a chronic and indolent gonorrhœal discharge; it acts in the same manner against ulcerative chronic diarrhœa, and against vaginal leucorrhœa. Inhalation of this solution in a state of spray relieves more or less completely the peculiar mucous discharge of catarrhal affections of the bronchi, even in cases of senile catarrh.

"No medication, I can assert, succeeds so well as injections of silicate of soda in chronic catarrhal, purulent, or hæmorrhagic cystitis. In cases of this kind the silicate of soda opposes the vesical decomposition of the urine; by coagulating the pus it prevents its reabsorption; by unfolding the vesical sac the injection of the silicate is applied to all the anfractuosities, and protects its surface against the painful contact of pus proceeding from pyelitis. No recent catarrh of the bladder will resist the styptic action of the silicate, which acts in some fashion in the manner of a mastic, preventing exudation from the mucous membrane.

"The faculty possessed by the silicate of soda of causing concretion of pus, muco-pus, and mucus, presents no inconvenience in the cases of ozæna, of bronchial catarrh, and of diarrhœa; for in all these cases the expulsion of clots remains an easy matter, but their emission may be attended with difficulty when they have been formed in the bladder. Hence the necessity of using with prudence the solution intended for vesical injections.

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* Communicated to the Académie des Sciences, Paris.

Art. 127.—*On Vesical Injection of a Solution of Silicate of Soda as a means of Removing and Preventing Decomposition of the Urine.**

By M. Dubrueil.

(*Gazette Médicale de Paris*, No. 49, 1872.)

For a very long time surgeons have been aware of the difficulty and often the impossibility of preventing the urine of certain patients from becoming decomposed and transformed into carbonate of ammonia, sulphohydrate of ammonia, and ammonio-magnesian phosphate. Washing out of the bladder several times in the course of the twenty-four hours, either with decoction of marshmallows, or with a more or less charged solution of carbolic acid or some other disinfectant substance, constitutes the most rational treatment.

M. Dubrueil has recourse to the same practice, but injects into the bladder silicate of soda.

There seems to be a necessity for some explanation with regard to the decomposition of the urine. Most frequently, if not always, some germ is required to give rise to the successive series of transformations. No doubt there are very great differences in urines with regard to their tendency to become decomposed; some urine will preserve its acidity for several days. Other urine, on the contrary, will emit a disagreeable odour immediately after it has been passed. But in all kinds of urine the presence of vibrios is necessary for the production of the phenomena of putrid decomposition. As a proof of this the fact might be mentioned of the extreme rarity of fetid urine in a patient applying for the first time to a hospital for instrumental treatment of the bladder.

Catheterism is the sole cause of the introduction of these germs into the bladder, in consequence either of the use of an unclean instrument, or of the simple fact of the entrance of air into the bladder. It is necessary then, in cases of this kind, to endeavour to destroy the germs. The numerous researches of M. Dumas and of MM. Rabuteau and Papillon have established the fact that the salts of soda are anti-putrid. One gramme of silicate of soda placed in a solution of 100 grammes of urea, prevents for an indefinite period decomposition of this urea and its transformation into carbonate of ammonia.

The following case is reported by M. Dubrueil:

"A man suffering from hypertrophy of the prostate, and subject to attacks of retention of urine, came under the care of M. Dubrueil. The urine was fetid and purulent, and the means previously employed, as detersive injections and repeated catheterism, had failed.

"For several days successively a solution of silicate of soda (1 gramme to 150 grammes of water) was injected into the bladder, and the patient ordered to retain this as long as he was able. The urine soon regained its normal condition, and became limpid. The fetid odour soon entirely disappeared.

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* Communicated to the Société de Chirurgie, Paris.

Art. 128.—*On the Histological Phenomena produced by the Application of Tincture of Iodine to a Cutaneous Surface.*

By Dr. Max Scheede.

(*Langënbeck's Archiv*, Bd. xv. Heft 1; *Gazette Hebdomadaire*, No. 45, 1872.)

The author, in studying the action of certain irritants on the skin, such as nitrate of silver, cantharadine, &c., turned particular attention to the action of tincture of iodine, as this agent presents a means of developing in the skin an inflammation which does not arrive at suppuration. The tincture of iodine was applied to the auricles of rabbits. The immediate phenomena are enlargement and turgescence of the blood-vessels. This congestion affects the veins chiefly, and may extend to such a degree (when the application of the iodine is repeated) as to result in gangrene of portions of this organ. In cases of less intense irritation the congestion results in an infiltration of the tissues by the blood plasma. On excising portions of the affected surface four or five hours after the application of iodine the author found that the skin had increased very much in thickness, and that fine sections presented an infiltration of plasma. In hardened sections this infiltration was represented by a finely-granular and opaque substance, which rendered further research very difficult. This inflammatory œdema attains its maximum at the end of six hours, and at the end of twenty-four hours has quite disappeared; the preparations then showing a normal transparency of the tissue.

Other marked changes are found in the course of two hours. Numerous lymphoid elements (leucocytes) may be observed, particularly near the veins and capillaries; they increase rapidly in number, and at the end of three or four hours the veins and capillaries are found enveloped in continuous masses of white blood-globules.

These white globules, or the lymphoid corpuscles which cannot be distinguished from the former, increase in size, present segmentation of their contents, and in five or six days seem to be metamorphosed into the fixed corpuscles of connective tissue. This development of new elements goes on for some days; but at the end of fifteen days, the newly-formed elements become granular and fatty and are absorbed.

To resume: tincture of iodine produces congestion, inflammatory œdema, accumulation of leucocytes without the vessels, and formation of new connective-tissue corpuscles, which run through a rapid evolution and finally disappear by fatty retrogression.

Art. 129.—*On the Elevated Health Resorts of Southern Hemispheres, with Special Reference to South Africa.**

By E. Symes Thompson, M.D., F.R.C.P., Physician to the Hospital for Consumption, Brompton.

(*The Lancet*, April 26.)

The author observes that, whereas works on special health-resorts suited to the very wealthy and very delicate are almost numberless

* Read at a Meeting of the Royal Medical and Chirurgical Society, April 8th.

there is a need for more general information about those less accessible resorts, which in these days of facile locomotion are within the reach of persons of moderate means.

The profession, and the better-informed portions of the public, realize that chronic chest diseases, or a tendency thereto, is not to be combated by a winter or two spent in a sunny health-resort; and that what is needed is a prolonged sojourn in a climate and under circumstances diverse from those in which the disease originated. They therefore manifest increasing readiness to advise the sufferer to undertake a long voyage, and stay several months or years in a well-selected climate.

The author, having had peculiarly favourable opportunities for gaining information about the Australian and South African colonies, trusts that his observations may not be without value to the Society.

The climates are classified, not according to latitude and elevation (Dr. Hermann Weber), but according to elevation and observed mean annual temperature. Isothermal lines are shown by a map to pass through countries in the Southern hemisphere in a very different and much more northerly position than do the isothermal lines corresponding to them in the Northern hemisphere.

Statistics of mean annual observations are misleading as criterions of actual temperature and rainfall, for thus places very dissimilar are grouped together—*e.g.*, Lisbon and St. Helena—in which case the winter temperature of the former is 12° colder, and summer 11° hotter, than in the latter; while a place may have a dry climate and a heavy rainfall—*e.g.*, the Karnatic—and *vice versâ*.

Again, in the same district, the physical geography of the country may lead to vast diversity in forming a sound opinion of the climate; so it is needful to study each place in detail, although the isothermal lines are of service for general indications. So also with regard to latitude, for we must remember that for each parallel of latitude a lower elevation is sufficient for securing immunity from phthisis than in the corresponding parallel of the Northern hemisphere.

After touching upon the difficulty of deciding between the claims of the various European health-resorts, some details are given as to the facilities and advantages of sea-voyages, the superiority of the sea-voyage to India over the Suez route, and of the passage round the Cape of Good Hope over that round Cape Horn.

The first group of health-resorts described is that of the Cape.

Cape Town (lat. 34° S.) itself lies low; it is too hot, and subject to violent south-east winds; but Wynberg, reached by railway nine miles off, is healthy.

Graham's Town (1800 feet elevation) is healthy and somewhat cooler than Pieter Maritzburg, the capital of Natal. It bears the same climatic relation to Port Elizabeth as Maritzburg does to Port D'Urban.

Natal (lat 28° to 32° S.) has low coast-lands almost subtropical in character, but the land rises in steps or plateaux. Maritzburg, its chief town, fifty miles from the coast, has an elevation or 2000 feet, and the land rises immediately behind to a height of 3800 feet. The prevailing moisture-laden S.E. winds make the rainfall on this ridge considerable, but a few miles inland mist, cloud, and rain lessen. The high table-land extends beyond the Drakenberg mountains; these form the back-

bone of this part of S. Africa, and rise here and there to a height of 9500 feet. The leading peculiarity of the climate is that in winter it has almost constant sunshine and little rain, though abundant rain and cloud in summer, so that the mean temperature of winter is greatly raised and of the summer is agreeably depressed.

The Free State (Orange River or Transvaal) is an elevated (5000 feet) pastoral country extending westward from the Drakenberg. The air is very exhilarating, whereas Natal is somewhat too relaxing for a perfect sanatorium. The character of the climate is described and the mean temperature, rainfall, &c., exhibited by tables, and evidence collected from public reports of local medical men, &c., is given as to the prevalent diseases of the country.

Passing westward beyond this, the climate becomes yet drier and the land more sterile, until we reach the rainless and utterly barren country of the interior. The point to be sought is that at which there is no excess of either dryness or humidity, and this is to be found in the neighbourhood of the capital of the Free State Bloemfontein. A few years ago there was much difficulty in reaching this place and obtaining suitable provision for an invalid, but the increasing prosperity which has followed in the wake of the diamond discoveries is improving this, and when the railway has taken the place of the slow ox-waggon, it will become easily accessible.

A passing notice is given of the elevated Indian sanataria, which, although north of the equator, are south of the equatorial heat line, and thus meteorologically in the southern hemisphere. Among these are mentioned the Neilgherries, 7600 feet, Neurellia, the sanatorium of Ceylon, and the mountain health-resort above Penang.

The climate of Australia is next compared with that of S. Africa, the Natal winter being more healthy for invalids than summer or winter in Victoria, and the Victoria summer probably more healthy than that of Natal.

Queensland resembles Natal in one respect, that the summer is the rainy season in both; but the former has no table-lands above 2000 feet, an insufficient elevation for this latitude.

The Darling Downs, behind Sydney, are about the same level, rising even to 3000 feet, and there are very healthy stations at nearly 2000 feet elevation on the Murray River.

Mont Lofty, behind Adelaide (2000 feet) is highly spoken of.

The climate of Tasmania is very delightful, but its highest mountains are under 4000 feet, and there are no really elevated health-resorts.

New Zealand is very mountainous, having peaks rising to 12,000 or 14,000 feet, but its ridges are like the Sierra of Spain, and there are no table-lands at any considerable elevation. The extreme windiness of the climate is its chief evil, but sheltered plains may be found as at Cook's Straits.

At the South American resorts on the east coast (Buenos Ayres, &c.) there appear to be no high lands, but on the western coast every important town has its elevated sanatorium. Some of these are highly eulogized, and as compared with the hot and crowded ports below, have doubtless many advantages; but there are few English, and English doctors are rare. The country is dry in many places, exposed to earth-

quakes, as well as political revolutions. Piura, above the port of Payta, lat. 5° 9′ S., is specially praised.

The Appendix consists of twenty cases, chiefly of lung disease, in which southern health-resorts have been tried. The family history and physical signs of the chest, before and after the trip, are briefly given, with sufficient details for the recognition of the cases and to demonstrate the influence of the climates referred to.

Art. 130.—*The Local Applications of the Derivatives of Tar.*

By L. D. Bulkeley, M.D.

(*Brown-Séquard's Archives.*)

The author gives the following as the most useful formulæ:—

Creasote.—Creasote is of the greatest value in the scaly diseases, as also in relieving itching, particularly in chronic eczema. It is also useful as a wash in burns and chilblains. For the latter, Devergie advises the following ointment: ℞ Creasoti, liq. opii subacet., sing. gr. x; ext. opii, gr. jss; adipis, ʒj. M. Creasote has been strongly recommended in erysipelas, in the strength of two drachms to the ounce of ointment, almost a specific effect being claimed for it; also painted full strength over the inflamed surface. Squire has recommended to use creasote in chronic psoriasis, in the proportion of two ounces to one of white wax; the ointment to be rubbed firmly into the eruption morning and night, after removing the scales. McCall Anderson has found it useful, but too irritating in some cases. He adds from five to ten minims to ointments for the purpose of allaying irritation of the skin. Tilbury Fox employs six drops of creasote, with six grains of the nitric oxide of mercury to the ounce, in cases of psoriasis in hospital practice. The officinal ointment of creasote is of the strength of half a drachm to the ounce.

Coal Tar.—Dr. McCall Anderson (*Practical Treatise on Eczema*) indicates the employment of coal-tar in certain scaly stages of eczema, and gives a prescription whereby an emulsion is produced, on dilution with water, to suit the requirements of the case, and which, he imagines, represents in a measure the "*liquor carbonis detergens.*" The following is Anderson's formula: ℞ Picis mineralis, ʒij; spiritus rectificati, ʒij. Cola et adde liquoris ammoniæ fort. ♏viij; glycerini (Price), ʒvj; aquæ destillat. ʒxij. The "liquor carbonis detergens" he alludes to as an excellent preparation. He also uses coal-tar in eczema in the form of an ointment, thus: ℞ Picis mineral., ʒij; glycerini, ʒiij; adipis unguent., ʒjss. M.

Art. 131.—*Transfusion of Milk in Cholera.*

By Edward M. Hodder, M.D., Toronto.

(*Practitioner*, January.)

Dr. Hodder reports three cases of true Asiatic cholera. In the first, a stout-built farmer, who was in a state of collapse, cold, pulseless, blue, and shrivelled, the secretion of the urine was arrested, and there

were vomiting and purging of rice-water fluid. Dr. Hodder opened a vein in the arm of this patient, inserted a tube, and then filled his syringe (previously warmed) with milk, 100° Fah., and injected slowly therewith. No perceptible change, either for better or for worse, took place; so, after waiting two or three minutes, he again filled the syringe and injected seven ounces more. The effect, he says, was magical; in a few moments the patient expressed himself as feeling better; the vomiting and purging ceased, the pulse returned at the wrist, the surface of the body became warm—in fact the man rallied, and speedily recovered without a bad symptom. The next day a woman, an habitual drunkard, was admitted in the same condition as the above described man. Dr. Hodder transfused fourteen ounces of milk in a similar manner, and in a few minutes the vomiting and other symptoms ceased and she improved; but towards evening collapse came on, when Dr. Hodder injected fourteen ounces more milk, and she also recovered, but after secondary fever.

The third case was admitted almost *in articulo mortis*, but he rallied for a time, then collapsed as the woman did, and died during Dr. Hodder's absence.

Art. 132.—*Nitrite of Amyl in Angina Pectoris.*

By W. Herries Madden, M.D., F.R.C.P.

(*Practitioner*, December, 1872.)

Having recently experienced in his own person the remarkably beneficial action of the nitrite of amyl in cutting short attacks of angina pectoris, Dr. Madden records what he felt. After a sharp attack he at once inhaled five drops, and the effect, he says, was truly wonderful. The spasm was, as it were, strangled at its birth. It certainly did not last two minutes, instead of twenty as formerly. And so it continued. The frequency of the paroxysms was not diminished for some time; but then they were mere bagatelle as compared with their predecessors, and consequently the drain upon the vital energies was greatly reduced. Under these improved circumstances, strength gradually returned; the attacks became less and less frequent, and finally ceased. Dr. Madden does not profess to give a full scientific description of the phenomena presented by the nitrite of amyl in action. The first effect was often bronchial irritation causing cough; then quickened circulation; then a sense of great fulness in the temples, and burning of the ears; then a violent commotion in the chest, tumultuous action of the heart, and quick respiration. The angina pain then died out, first in the chest, next in the left upper arm, and last of all in the wrist, where it was usually extremely severe. There was not at any time the slightest confusion of thought, or disturbance of vision, but occasionally slight and transient headache. As regards physical signs, the rasping sound was soon modified; but a loud blowing systolic murmur—heard at the base of the heart, along the aorta and in the subclavians, especially the right—continued throughout the illness. One curious feeling which

Dr. Madden commonly had, was that the front of the chest seemed to be bulged out in a convex prominence, which suddenly terminated at the lower end of the sternum in a sharp and deep depression towards the spine. This was a purely subjective phenomenon. There was no contraction of the diaphragm, and no retraction of the abdominal walls.

In *slight* commencing attacks, merely smelling the cotton-wool on which a previous dose had been poured was sufficient to relieve the pain. It acted like a gentle anæsthetic without any quickening of the circulation. But in a *severe* attack, the full action of the drug, with its concomitant vascular commotion, was quite essential. The pain never began to yield until the heart was violently affected.

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PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 133.—*On the Treatment of Aneurism by Electrolysis.*

By JOHN DUNCAN, M.A., F.R.S.E.

(*Edinburgh Medical Journal*, December, 1872.)

The conclusions which may be come to provisionally, with reference to the question, What aneurisms are to be so treated? Mr. Duncan states in a series of propositions:—

"1. *In aneurisms of the great vessels, as the aorta, innominata, and subclavian, which are progressing in spite of proper medical treatment, electrolysis may be hopefully used.*—These are cases which, being beyond the reach of ordinary treatment, would justify heroic measures. Electrolysis is certainly not heroic, and if there be hope of success, its dangers would not deter. I was formerly of opinion that it was to be used in aortic aneurism only as a means of preventing or delaying external hæmorrhage, because I could see little hopefulness in any attempt at complete cure; but the recent Italian cases have modified my views, and I believe that it is proper to insert the needles when a progressing aneurism can be thus reached. I yet limit the operation to those which are getting worse, but I am induced to do so greatly by two cases of aortic aneurism, concerning which Dr. George Balfour consulted me with a view to surgical interference. One of these, which occurred in private practice, had already penetrated the sternum; but as it was not progressing, and as there was evidently no danger from external hæmorrhage, we determined to delay yet awhile. This aneurism again retired completely within the thorax. The other case in the infirmary was yet more striking. An aortic aneurism began to grow upwards into the neck, and outwards from between the ribs, with startling rapidity. In a few days it attained a very large size. It was a case in which one would not have hesitated to operate, that the man might have at least a chance. I met Dr. Balfour at the patient's bedside, and we found that what the day before had been a strongly pulsating aneurism, was now simply a collection of blood, fluctuating to the touch, but entirely without pulsation. It slowly grew less, and the man ultimately left the hospital in such a condition that no physical or general sign of aneurism remained. Such cases as these make one hesitate to recommend interference without discrimination.

"2. *Compression, when possible, is preferable to electrolysis.*—While the risks of these two methods are perhaps nearly equal, the success of compression is certainly as yet greater than that of electrolysis.

"3. *Should compression fail, electrolysis is preferable to ligature.*—In

a case of popliteal aneurism, were one obliged to choose between ligature and electrolysis, ligature is so sure a remedy that one could not hesitate to employ it. But if compression have been long and carefully applied without success, the condition of parts is rendered less favourable for ligature, and the greater safety of electrolysis would then, I think, weigh down the scale in its favour.

"4. *In cirsoid aneurism, electrolysis is easier, safer, and more certain than any other mode of treatment.*—I have already published one successful case. It was of so formidable a character that Mr. Syme had declined to interfere unless a fatal result became imminent. The patient was cured in a few sittings. Other two have come under my observation. Last summer a young gentleman came to me with a small tumour of this nature in the lower eyelid. It was about the size of a pigeon's egg, and pulsated strongly. One sitting of forty minutes' duration reduced it to a hard and non-pulsating nodule. A large cirsoid aneurism of the cheek and side of the head came under the care of my colleague, Dr. Joseph Bell, about two years ago. Many severe measures had been elsewhere adopted without the slightest benefit. After a few operations the pulsation entirely disappeared, and the mass was rendered so hard and small that the man went away to allow the cure to complete itself. He came under my care about a year ago. The tumour had again increased much in size, but without the slightest return of pulsation. The current was passed either by Mr. Spence, in whose ward he was, or by myself, about eight or nine times, and the swelling was again reduced to less than half its size. His general health, however, failed somewhat in hospital; he was sent to the country to recruit, and he has not yet returned.

"5. *In varicose aneurism, in gluteal and in sciatic aneurism, electrolysis is probably the proper treatment.*—I have not had an opportunity of using it in these forms of disease, and I therefore advance this proposition tentatively, basing it on our general experience of electrolysis and on the severity of the ordinary operations which have been undertaken for the cure of these diseases.

"6. *In many aneurisms of small arteries, it is likely to prove a useful addition to our means of cure.*—It has indeed been already several times successfully employed in the lingual, temporal, and radial arteries, and in the palmar arch."

Art. 134.—*On the Pathological Anatomy of Varicose Veins.*

By Dr. Cornil.

(*Archives de Physiologie Normale et Pathologique*, No. 5, 1872; *Gazette Hebdomadaire*, No. 51, 1872.)

These histological researches are thus given in *résumé*:—

Varices are the result of a chronic inflammation of the veins essentially characterized by the multiplication of the connective-tissue elements of the veins, especially in the inner layer of the middle membrane, by distension and extension of the network of the vasa vasorum, and consecutively by dilatation and calcareous incrustation of

the walls of the altered vessels. The walls of varicocele veins are much thickened by this new formation of connective tissue and by the dilatation of the vasa vasorum. From this chronic inflammation, from the calcareous degeneration, and the distension of the wall after the partial disappearance of the middle membrane, varices may approach in character chronic endo-arteritis. The latter, however, differs with regard to its peculiar fatty and atheromatous degeneration.

Art. 135.—*On the Phenomena Produced by the Injection of Air into Veins and Arteries.**

By M. Laborde.

(*Gazette Hebdomadaire*, No. 10, 1873.)

In this paper M. Laborde gives the definite results of experiments made by himself and M. Muron on the effects produced by the injection of air into the arterial and venous vessels of dogs. Notwithstanding all the previous labours made on this subject, there were still some points to be elucidated. For example, contrarily to the conclusions derived from the experiments of M. Tillaux, air can traverse the capillaries; this fact may be directly verified by injecting air into the carotid of one side towards the head, while the exposed jugular vein of the other side is observed. There are great differences in the arterial or venous injections, according to the rapidity of the introduction of air, and according to the quantity injected. If one injects air into an artery—for example, the peripheral end of the carotid—slowly, and in a dose of from ten to fifteen cubic centimetres, the animal does not die immediately, but presents tetanic convulsions, coma, attempts to vomit, and finally, after a period more or less prolonged, dies. At the autopsy will be found veritable gaseous emboli in the capillaries, and arterioles of the bulb, with bulbar ischæmia, and even with hæmorrhages. If air be injected in larger quantity, from twenty to sixty cubic centimetres, at the peripheral end of the carotid, the animal rapidly becomes convulsed, the respiration is suspended, the left ventricle filled with air, and the coronary arteries with air-bubbles; the encephalon is found congested, and air-bubbles are found in its vessels and capillaries. If, on the other hand, air be injected into a vein, one may, by proceeding slowly, cause a considerable quantity, about fifty cubic centimetres, to penetrate without the slightest accident.

M. Laborde succeeded in injecting, in the course of two hours, as much as 600 cubic centimetres of air into the veins of a dog, without producing a fatal result.

In order to cause death, much larger quantities of air are required for venous than for arterial injections. Thus, with between 100 and 200 cubic centimetres of air (instead of between 20 and 25) one will bring about convulsions, resolution, and death. At the autopsy will be found extreme distension of the right ventricle, which contains clot mixed with air. According to M. Laborde, the mechanism of death in these different

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* Communicated to the Société de Biologie, Paris.

cases is to be explained in two ways. The air mixed with blood which traverses the capillary network does not produce in the lungs a sufficient amount of lesion to produce death. Air injected into the arteries causes death through the arrest of the circulation in the medulla oblongata. Air injected into the veins causes death through distension and loss of contractility of the right side of heart. In all cases the air acts, not as a poisonous agent, but as an agent of mechanical obliteration—that is to say, by producing gaseous embolism.

Art. 136.—*On Furuncle and Carbuncle, and their Abortive Treatment.*

By Dr. Theodor Roth.

(*Deutsche Klinik*, 33-39, 1872 ; *Schmidt's Jahrbücher*, No. 11, 1873.)

The author censures the prevalent confounding of the terms carbuncle, anthrax, and pustula maligna. The latter term he reserves for malignantly gangrenous infection, whilst he uses the synonymous words anthrax and carbuncle for the well-known skin affections. As a matter of fact, carbuncle represents an advanced stage of furuncle, although it differs from this in its great tendency to extension, in its slight elevation above the surface of the skin, in its tolerance of pressure, and in its resulting in gangrene of all the affected cellular tissue. Furuncle, on the other hand, is very painful ; projects as a pointed swelling ; causes death of only a portion of the indurated cellular tissue, and never attains a very large size. Both affections have their starting-point in the rete Malpighii and in the neighbourhood of sebaceous glands.

The author's treatment consists in the application, repeated every two hours, around the circumference of the furuncle or carbuncle of a portion of grey ointment, as large as a pea, and over this a piece of lint, completely impregnated with the same agent. If the treatment be commenced sufficiently early, pain and inflammation cease, and a doughy tumour is left which may afterwards be rapidly resolved on the use of mercurial and conium plaster. In advanced cases where sloughing has already commenced, the inflammation may yet be cut short, so that instead of extensive sloughing, only small and inconsiderable abscesses appear, which, when treated with mercurial plaster, soon disappear. When profuse suppuration has already taken place, nothing remains save incision of the tumour.

According to Dr. Roth's experience, the above-described method is superior to other proposed abortive methods, such as local bleeding, and the application of ice, nitrate of silver, or iodine.

Art. 137.—*Rodent Cancer.*

By J. W. Hulke, F.R.S., Surgeon to the Middlesex Hospital.

(*Medical Times and Gazette*, January 11.)

Some of the lessons which the cases related by Mr. Hulke tea c are :—

1. Not to think too lightly of small, hard pimples and warts in the face in persons advanced in life, but promptly and thoroughly to excise them, especially if they show a tendency to grow, ooze, and scab. Their complete excision, together with a broad fringe of sound tissue, will probably secure a future immunity. It is advantageous to close the fresh wound when large with a flap of sound skin from an adjoni part.

2. Never to try to destroy them with nitrate of silver, as is too often done, because its action is too superficial and its use seems often to hasten their progress.

3. When the surface of the ulcer is so irregular that complete excision is impracticable, it should be supplemented by freely burning with a hot iron those parts which could not be reached with the knife, and by the free application to them of the chloride of zinc paste.

4. Some apparently desperate cases at an advanced stage may thus be treated very successfully, if the patients possess confidence and docility.

5. Such composite operations are well borne by persons in advanced years if care be taken to avoid much bleeding.

Art. 138.—*On Rodent Ulcer.*

By J. C. Warren, M.D.

(*The Anatomy and Development of Rodent Ulcer.* Pp. 66. Boston, 1872.)

With regard to the *development* of rodent ulcer, Dr. Warren says:—

"In summing up, then, the result of these observations, we find that in certain cases:

"1. The formation of the cancer-cells is preceded by an escape of the white blood corpuscles through the walls of the vessels, and an accumulation of similar cells in the adjoining lymphatic canals.

"2. That this is followed by an apparent transformation of these cells into cells resembling strongly the epithelium of the rete Malpighii.

"3. That the epithelium of the parts affected does not appear to take an active part in the process, but may exert a certain influence on the character of the formation taking place.

"4. That the cancer-cells lie in the lymphatic spaces of the connective tissue, and do not invade, to any appreciable extent, the lymphatic vessels. . . . .

"The cancer-cells, when once formed, appear to possess little power to multiply themselves by further proliferation. The masses of cancer-cells certainly do not show any signs of such activity. We find no evidences of an active cell proliferation, and consequently no active outgrowth into the neighbouring tissue. . . . . In rodent ulcer, the cells rarely extend a line or two below the surface of the ulcer, and beyond its edges. The lymphatic vessels, as we have seen, are invaded at the most to a very limited extent, while in other forms of cancer the cells penetrate freely into the lymphatic network about them, and by repeated multiplication are enabled to continue their progress until conditions are arrived at most favourable for the infection of the adjacent

glands. The low formative power of the elements, the absence of power to multiply themselves to any extent, when once formed, and their extremely short-lived character, seem to afford the most satisfactory explanation of the inability of the disease to affect distant parts."

Art. 139.—*On the Treatment of Wounds by Alkaline Applications.*

By R. T. Manson, M.R.C.S.E., &c., Howden.

(*British Medical Journal*, October 5.)

Alkalies, as local applications, check alkaline secretions. Laudable pus has an alkaline reaction. The application of alkaline substances may therefore be supposed capable of beneficial action on pus-secreting surfaces. The officinal linimentum calcis, spread on fine cotton-wool and applied to the surface of a wound, seemed to afford the best method of testing the value of the theory. It has been tried by Mr. Manson in a great variety of surgical cases, from bruised fingers to amputations, and with uniform success. The advantages of its use are said to be: lessening the secretion of pus from a wound; easiness of application; extreme adaptability to irregular surfaces; prevention of the access of atmospheric air to the wound; promotion of healing by first intention, or, when that does not occur, promotion of healthy granulation; doing away with the use of nitrate of silver or sulphate of copper; ease to the patient, and saving of time to the surgeon. Used on lint, the linimentum calcis is not nearly so valuable as when used on fine cotton-wool. Lint does not get into the holes and corners of an irregular wound as cotton-wool does; it is not removed so easily; it becomes more easily dried and hardened, and possesses less of the nature of an artificial skin than cotton-wool. Linimentum calcis has long been used for burns and scalds. Some surgeons think it a nasty application; but when made with olive-oil instead of linseed-oil, as was formerly the case, the nastiness is abolished. The *modus applicandi* is as follows: On a piece of fine cotton-wool, rather larger than the surface of the wound to which it is to be applied, the linimentum calcis is poured and spread over the wool, which is then placed over the wound and covered with common wadding. Either bandages or strips of plaster may be used to keep the lint in position.

Art. 140.—*On Cleansing of Wounds.*

By G. W. Callender, F.R.S., Surgeon to St. Bartholomew's Hospital.

(*The Lancet*, January 25.)

At a meeting of the Clinical Society on January 10th, Mr. Callender brought before the notice of the members the arrangement adopted in his wards at St. Bartholomew's for the use of camel-hair brushes for the

cleansing of wounds. He pointed out the importance of gentleness in their dressing, and stated that, by using the brushes, the cleansing of a wound was no longer in any instance a painful process. The chief object, however, of the plan recommended, was to do away with the employment of sponges and other materials commonly used for cleansing wounds, and which some surgeons believe to be a frequent cause of the passage of infectious material from one patient to another. During nearly two years, of 148 patients operated on, excluding hernia operations, in the wards, only four had died.

Art. 141.—*On the New French Method of Dressing Wounds by Cotton Wadding.*

By Walter Reid, M.D., Surgeon R.N.

(*The Lancet*, April 26.)

A new method of dressing wounds at present attaining great popularity amongst French surgeons, is that which is known as the "pansement ouaté" of M. Alphonse Guérin, of the Hôtel Dieu. It consists in the use of large quantities of cotton-wadding, somewhat after the manner of treating extensive burns by the same material.

The advantages contended for by the advocates of the "pansement ouaté" are—

1. Avoidance of the action of the air, which irritates not only by its physical properties, but also by reason of the minute organized bodies which it holds in suspension.

2. A compression, firm elastic, and sustained, which moderates the afflux of the blood, and produces rigorous immobility of the parts, both in themselves powerful antiphlogistic agents in the treatment of wounds.

3. Remarkable diminution and frequently total absence of pain.

4. Constant uniform temperature of the parts, also an important agent in the treatment of wounds.

5. The ease with which it is applied, and the avoidance of the evil consequences of dressing the wound daily or every two days.

6. The protection afforded locally, thus facilitating the transport of the sick and their dissemination in crowded hospitals.

Lastly. The statistics of M. Guérin show a very marked diminution in the mortality of his large operations since his adoption of this method. Thus, during the troubles in Paris, when his wards were crowded with wounded men, under the worst conditions, nearly all his large operations were fatal; but after its employment he had nineteen successful cases out of thirty-four large operations.

Art. 142.—*On the Treatment of Arterio-Venous Wounds complicated with Diffuse Aneurism and Non-cicatrization of the Cutaneous Wound.**

By M. Le Dentu.

(*Gazette Hebdomadaire*, No. 12, 1873.)

1. Immediately after the accident direct compression should be made on the wound and on the sac in order to favour cicatrization of the skin and the subcutaneous tissues.

2. In cases where the wound has not cicatrized and the sac is on the point of bursting, double deligation should be practised of the artery and vein above and below the sac, and as near as possible to it.

3. In cases where the sac has burst it would be necessary to carry out the same treatment and also to make large incisions in order that the wound may be washed out and septicæmia prevented. This method should be preferred to deligation of the vessels in the sac itself, as in the old method, because by applying the ligatures at points removed from the arterio-venous orifice one places them on parts of the vessels which are less likely to have undergone morbid changes.

4. Partly as a corollary of these conclusions, it may be added that in a case where one has been led by force of circumstances to operate on an arterio-venous aneurism according to the old method, it would be prudent to carry a double ligature around the extremities of the vein whenever the dimensions of the vessels are such as to suggest a risk of secondary hæmorrhage.

Art. 143.—*Treatment of Gunshot Wounds.*

By M. Legouest, Inspecteur du Service de Santé de l'Armée.

(*Traité de Chirurgie d'Armée*. Deuxième édition. Paris, 1872. Pp. 793.)

The treatment of simple gunshot wounds should itself be simple. The local applications may consist of simple dressings or cold lotions, the former of *linge fenetrée* or a pad of charpie supported by a light compress. This dressing should remain untouched for a few days, or until the occurrence of suppuration renders its removal easy and little painful. Water at the ordinary temperature is the best local application that can be made use of, and it is recommended to be used by means of thick compresses, pressure by bandages being condemned. The application of water is contra-indicated in cases where it gives rise to disagreeable sensations on the part of the patient. The introduction of setons into the track of gunshot wounds is condemned.

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* Communicated to the Société de Chirurgie, Paris.

Art. 144.—*Foreign Bodies in Wounds.*

By George Johnson, M.D., F.R.C.P.

(*The Lancet*, November 30.)

At a meeting of the Clinical Society of London, November 8th, Dr. George Johnson related a case in which trismus, with facial neuralgia and palsy, and a recurrence of epilepsy, were excited by a foreign body in a wound on the cheek. H. M——, aged forty-four, a wheelwright, was admitted into King's College Hospital on July 17th. On July 4th he was cut on the cheek by a blow from an iron axle that fell against his face. The wound, having been washed, was strapped up by a chemist; it healed, but remained very painful. On the evening of the 12th he had an epileptic fit. In early life he had been subject to epilepsy, but, until the occasion mentioned, had been free from fits for twelve years. On the morning of the 13th he had difficulty in opening the mouth and in closing the left eye. This difficulty continued, and increased until the time of his admission on July 17th. The left side of the face was paralysed, the features being drawn to the right. When he attempted to shut both eyes the left remained partly open. He could separate the incisor teeth only to the extent of one-eighth of an inch. The left masseter muscle felt permanently hard and rigid. Severe pain was felt over the left side of the face, with a sense of numbness in the skin. There was a scar, about three-fourths of an inch long, an inch below the left eye; the cicatrix being hard and very tender on pressure. Asked if he thought it probable that dirt had got into the wound, he said that the iron which struck him was covered with grease and dust. Dr. Johnson then directed Mr. Birch, the house-physician, to cut through the cicatrix; and, this being done, a sharply angular piece of flint, nearly as large as a grain of wheat, was discovered and removed. It weighed half a grain. Water-dressing was applied to the wound. At first no medicine was given; but after the second day, as he continued to suffer from pain which disturbed his rest, twenty grains of chloral hydrate were given twice in the twenty-four hours. The symptoms gradually passed away. The pain subsided; the muscles closing, the jaw relaxed, and the facial muscles recovered their power. When he left the hospital on the 29th there was still a trace of facial palsy; but on August 9th, when he came as an out-patient, he reported himself quite well. On September 26th he again presented himself, and said that he had continued well. He appeared in perfect health. Dr. Johnson referred to a similar case which he had published (*Proceedings of the Royal Medical and Chirurgical Society*, 1870–1). A boy, aged thirteen, was admitted in June, 1870, with trismus and tetanic rigidity of the trunk and extremities. The symptoms, which had existed for rather more than a week, had commenced about ten days after a wound on the thigh by a sharp piece of wood. The wound had healed, but the cicatrix was hard and very tender on pressure. While examining the case, Dr. Johnson remembered two fatal cases of traumatic tetanus referred to by Dr. Alfred Taylor in his book on Poisons (second edition, p. 143). In both cases the wound had healed; but in one there was found after death,

beneath the cicatrix, a piece of iron, and in the other a splinter of wood. Dr. Johnson then requested Mr. Whitmore, the house-surgeon, to incise the cicatrix; and, this being done, a piece of woollen stuff, of the size of a small pea, was discovered and removed. The stick which wounded the boy's thigh had pierced his trousers, and, carrying with it a piece of cloth, had left it in the wound. Fifteen grains of chloral were given every six hours for a few days. The symptoms gradually subsided, and he was discharged well on July 27th. Dr. Johnson remarked that the chief interest of the two cases consisted in the fact that formidable nervous symptoms were excited by the presence of a foreign body of small size beneath the cicatrix of a recently healed wound. The two foreign bodies—the angular bit of flint and the small lump of wool—were exhibited to the Society.

Art. 145.—*Hæmorrhage and its Treatment.*

By Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital.

(*The Practice of Surgery.* 8vo, pp. 984. London, 1873.)

In speaking of torsion as the best method of arresting the flow of blood from a divided artery, Mr. Bryant says:—

"In a physiological point of view there is no method at the surgeon's command more perfect for the control of hæmorrhage than that of torsion; for unlike acupressure, which uses one only of nature's hæmostatic processes, or the ligature, which is a foreign body in a wound, and becomes a source of danger by undoing at a later period of the case what has been done at an earlier by nature's own efforts, it utilizes to the utmost all the physiological processes employed by nature to prevent and arrest bleeding, and places them in the most favourable position to take effect." "Plastic lymph is poured out by the divided tunics in the same way as it has been shown to be in the application of the ligature, and it acts the same part in cementing all the arterial tunics and clot together; but there is this difference between the two forms of practice, that where the ligature has been used, the ulceration of the vessel that is necessary to allow of its escape may undo all that nature has done to seal the artery and prevent hæmorrhage; whereas, when torsion has been efficiently performed and the hæmorrhage arrested, no subsequent action is liable to undo the good work that has been done, or hinder the permanent closure of the vessel.

"The physiological arguments in favour of torsion are very great, and the practical advantages seem to be no less, for after three years' experience of the practice applied to vessels of all sizes, the femoral being the largest, I have had no mishap. Wounds have united more rapidly and kindly. Primary union being the rule, there has been less constitutional disturbance after operation, and consequently less liability to traumatic fever, pyæmia, and other complications, such as we are all too familiar with in the practice of surgery. I have had stumps heal in a week, and patients up in two weeks, without one single drawback; rapid and uninterrupted convalescence following the operation. In other cases equally good success can be recorded.

"When a true antiseptic ligature has been found, by which a vessel can be secured without the introduction of any permanent cause of irritation, the above comparison will not hold good; but at present it is not in existence, although Mr. Lister's investigations in that direction with catgut ligatures steeped in carbolic acid are encouraging in the extreme."

Art. 146.—*Torsion, as a Means of Arresting Hæmorrhage.*

By William Colles, M.D., F.R.C.S.I.

(*Irish Hospital Gazette*, January 15.)

Dr. Colles points out the objections to the ligature and acupressure, as means of arresting arterial hæmorrhage, and states, as the result of his observations, that torsion is the safest and simplest means of arresting bleeding in wounds. He recommends that the artery should be as free and isolated from surrounding tissues as possible, and that the surgeon should hold the parts at the point of the forceps, so as to cause the twisting to commence at the forceps, and from this gradually extend upwards along the vessel.

The method of applying torsion he recommends, is that proposed by Mr. Syme, "merely catching the vessel and twisting, without the appliance of the second forceps. Thus we have the inner coats forcibly separated from the outer coats, driven inwards in the vessel so that the two sides come to be applied close together, and the more we twist the external coat the higher the separation of the inner coats takes place. The outer coat is twisted, and retains its new form and position; there is nothing to cause it to untwist. This twisting may be continued till the end in the forceps comes away, which is, I think, to a needless extent; or two or three turns may suffice, and the forceps be then removed. We thus have a perfect obstruction to the flow of blood; the inner coats so inverted, that they cannot be forced back again, and a coagulum soon forms inside; and the outer coat, not much altered from its normal healthy condition, but changed in shape so as to prevent any possibility of the blood passing through it.

"We thus have the bleeding arrested, without the possibility of its recurrence, either immediate or remote, which is the great superiority of this mode of treatment. Besides this, we have the cause of inflammation at its minimum in the wound; and thus the patient is able to be up and about in a much shorter time, as there is no fear of secondary hæmorrhage. There is less inflammation or unhealthy action in the wound, and the chances of immediate union are much promoted."

Torsion, however, he observes, cannot be applied, in the manner he advises, where it is wished to arrest the current of blood in the continuity of the artery; but he throws out the suggestion that it may be accomplished by laying bare the artery, catching it transversely in a narrow forceps, and pressing it so as to divide the inner layers, and then pushing them away from the outer coat upwards, and also downwards, leaving the outer coat *in situ*, and to contract.

Mr. J. P. Hayes believes (*Irish Hospital Gazette*, Feb. 1st, 1873) that it would be a safer procedure to grasp the vessel transversely, at two

points—say two-thirds of an inch apart—with a pair of narrow-bladed forceps, and to *divide it completely* midway between the compressed portions. Torsion in its entirety could then be applied to the proximal and distal orifices of the severed vessel.

Should it be found a difficult matter to seize the artery in the manner described, an aneurism needle, armed with a double cord, would enable the surgeon to place two ligatures on the vessel, with an interval of a few lines between them, as the site for *section*. After adequate torsion, each ligature with the included portion of arterial wall should be cut off, and so neither foreign substance nor sloughing tissue could interfere with the process of union between the lips of the wound.

Art. 147.—*On the Means of Augmenting the Length of Bones and of Arresting their Growth; Application of Experimental Data to Surgery.*

By M. Ollier.

(*Gazette Médicale de Paris*, No. 15, 1873.)

The following communication was presented to the French Academy of Sciences by M. Nélaton :—

"I have demonstrated by experiments on animals, that we can considerably modify the increase of bones by irritating them during their period of growth. According as the irritation is applied to this or that point, is the length of the bone increased or its growth arrested. Any diaphysial irritation, provided it attain a certain degree and be sufficiently persistent, produces elongation of a bone, whilst irritation applied to the periosteum, the medulla, and the osseous substance properly so called, either separately or simultaneously, gives rise to hypertrophic phenomena.

"The means of producing this irritation, and, consequently, elongation of a bone, are very numerous and very varied. Laceration, incision, excision, cauterization of the periosteum, irritation of the medulla by perforation, comminution, and the introduction of foreign bodies, are all followed in young animals by an elongation of bone. It is unnecessary to attain suppuration in order to produce this result. Subacute but prolonged irritation is the most efficacious and the least dangerous means.

"The excess of growth thus produced is proportional to the persistence of the irritation; it may extend even to the tenth of the total length of the bone. In man I have found it still more considerable after spontaneous osteitis.

"This elongation of a bone takes place, not by instertitial growth of the osseous substance (this, indeed, plays a secondary part), but by increased activity in the proliferation of the cells of the conjunctive cartilages. As in normal growth, cartilage is the principal and almost exclusive agent of the increase in length of bone.

"The activity of cartilage is thus over-excited by the propagation of irritation, the starting-point of which is seated in the diaphysis; but if this indirect irritation increases the physiological activity of cartilaginous

tissue, direct irritation of the same cartilage, that is to say, irritation of its proper tissue caused by puncture, laceration, &c., produces quite different results. Whether it be slight or intense, this direct irritation of conjunctive cartilage nerve produces elongation of bone. If it be slight, it does not appreciably influence the bone; if it be intense it produces an arrest, proportioned to the importance of the irritated cartilage in the longitudinal growth of the bone.

"Intense irritation of this cartilage by repeated crushing and laceration of its substance disturbs the evolution of its cellular elements, and, without always hastening ossification, produces, as a definite result, a sensible arrest of growth.

"Partial or total destruction of the cartilage by excision or repeated crushing, arrests partially or completely elongation at the osseous extremity thus treated. If the cartilage be removed, and at the same time a thin disc comprising the whole thickness of the bone, the arrest of growth is complete. If but a portion be excised, the growth is arrested at the level of the part removed; but as it continues in the parts of the cartilage which have been left intact, there result independently of a more or less marked arrest of the general increase of the bone, various irregularities in the length and curvature of the bone.

"The removal of periosteum, or the evacuation of a portion of medulla, does not produce, with regard to the growth of bone, the same result as removal of cartilage. Periosteum and medulla are rapidly reconstituted by the proliferation of elements existing in these tissues.

"After the removal of long strips of periosteum from the diaphysis of a long bone, there results an increase in the length of the denuded bone. This denudation of bone acts like all injuries affecting a diaphysis, that is to say, by the irritation which it occasions of other vascular tissues of the bone.

"Irritation of the middle portion of a diaphysis causes the greatest elongation of bone. Irritation of its terminal (juxta-epiphysial) portions sometimes produces an inverse result; when the irritation is intense, and suppurative inflammation reaches as far as the limits of the cartilage of conjunction, it will be propagated to this cartilage, and cause its partial or total destruction. Consequently acute inflammation of the whole of a diaphysis, reaching even to its limiting cartilages, will be followed by an arrest of growth; the cartilages at the limits of the osseous suppuration are either destroyed or their activity is profoundly modified. A bone thus inflamed is in the same condition as a bone the two conjunctive cartilages of which have been artificially destroyed.

"These experimental data are completely confirmed by clinical observation, and surgeons observe in man sometimes elongation of an inflamed bone, and at others an arrest of growth. Experimental facts supply us with explanations of this; I refer to my work for the details of my experiments on the different lesions capable of influencing of bone. It remains for me to demonstrate that these experimental data are applicable to surgery, and that we may, in certain cases, in man as in animals, arrest or further the growth of bone.

"It need scarcely be remarked, that all the proceedings for causing irritation which I have used on animals are not applicable to man. Several would be pregnant with danger, especially those which act upon

the medulla. Irritation of the medullary tissue exposes the patient to the risk of very serious septicæmic symptoms, and if it result in suppuration, will, in certain cases, be almost inevitably followed by pyæmia; but if care be taken to avoid attacking the medulla directly, and to reject absolutely certain irritative proceedings which are dangerous even in those animals which best tolerate injuries, one may, in proceeding with precautions which are the rule in all interference with man, irritate the periosteum or act on a conjunctive cartilage. We shall thus have at our disposition a means of elongating bones (irritation of the periosteum), and a means of arresting their growth (direct irritation, destruction of conjunctive cartilages).

"These operations would not be applicable to all the bones of the limbs. Several of these organs, by reason of their deep situation, and of the relations of their extremities with corresponding synovial membranes, could not be attacked without danger. The bones of the leg and forearm, however, that is to say, those bones in which these operations would be most frequently indicated, supply favourable organs from an operative point of view.

"In what cases might we intervene with these proceedings? I am unable, in this succinct communication, to pass in review all the cases in which it might be necessary to modify the growth of bones. I restrict myself to the mention of two examples, which will render clear the indication to be fulfilled and the aim to be proposed. It is especially in cases of unequal development of the parallel bones of the leg or forearm, that modification of the growth of these bones would be useful, in order to remedy the deformities of the hand and foot resulting from this inequality of growth.

"If the growth of the radius, for example, be diminished or arrested by epiphysial osteitis with a morbid change of its inferior conjunctive cartilage, the ulna continuing to grow according to the laws of its normal development, will project beyond the radius inferiorly. The hand will then be displaced at the radial margin of the limb, and will undergo a very unpleasant direction with regard to form, and a very disturbing one with regard to function. If in a case of this kind the growth of the ulna be arrested by destroying its inferior conjunctive cartilage, the direction of the hand may be made to cease, the extremity gradually returning to its normal position as the radius grows.

"Let us suppose, on the other hand, osteitis of the middle portion of the diaphysis of the radius with considerable hypertrophy of this bone. The ulna remaining healthy, and uninfluenced by the inflammation of the neighbouring structure, cannot keep pace with the radius in its elongation, and though increasing regularly in length, is soon found to be too short. Hence there results a direction of the hand which becomes more and more inclined towards the ulnar margin of the forearm. An efficacious means for remedying this deviation of the hand is stimulation of the growth of the ulna. The superficial position of the diaphysis of this bone will permit the surgeon to act upon its periosteum, either by subcutaneous irritation or by cauterization, in order to excite an activity which would result in hypertrophic elongation of the bone."

Art. 148.—*On Ostitis in Relation to the Elongation of Bones.*

By M. A. Poncet of Lyons.

(*Gazette Hebdomadaire*, No. 49, 1872.)

1. Ostitis, as has been demonstrated by the researches of M. Ollier, acts differently on the increase of bone according to the seat which it occupies.

2. Ostitis of the middle portion of a diaphysis, occurring during the period of growth, causes elongation of the bone.

3. An arrest of development is observed in cases of juxta-epiphysial ostitis when the inflammation is seated quite at the boundary of the cartilage of conjugation and affects this cartilage.

4. Diaphysial inflammation, especially when it is mild and chronic, may cause elongations of the femur, and tibia to the extent of seven or eight centimetres; most frequently, however, the difference between the limbs does not exceed one or two centimetres. I have also noticed considerable shortening in cases where the inflammation had invaded and destroyed the cartilage of conjugation. Inflammation affecting the totality of a diaphysis and followed by suppuration at the boundaries of the cartilages of conjugation, causes an arrest in the growth of the bone.

5. Experimentation permits one to account for these different effects of inflammation according to its seat. It shows that irritation and injury of a diaphysis may result in an elongation, whilst the same causes will produce an arrest of development when acting directly on the cartilage of conjugation; they are sufficiently intense to disturb or prevent its evolution.

6. Hypertrophic elongation is seldom appreciable except in young subjects and during the period of the growth of the skeleton; when once the anchylosis of the epiphyses has been perfected, it is rarely, or at least with difficulty, recognisable on the living subject. Some cases, however, have been reported which show that after the fusion of the epiphyses a slight elongation of an inflamed bone may be the result of an interstitial growth.

Art. 149.—*Vaccinal Syphilis.*

By Jonathan Hutchinson, F.R.C.S., Surgeon to the London Hospital.

(*Medical Times and Gazette*, February 1.)

At a meeting of the Royal Medical and Chirurgical Society, Jan. 28th, Mr. Jonathan Hutchinson read "A Second Report on the Communication of Syphilis in the Practice of Vaccination." This paper contains an account of two series of vaccination-syphilis (each series containing but a single case) which have come under Mr. Hutchinson's notice since his last communication on the subject in 1871. These two cases (forming the author's third and fourth series) are prefaced by a few

remarks referring to cases published by others on the Continent and at home; the author also reasserts the great importance of making all such cases public. The latter part of the paper is occupied with general conclusions and recommendations drawn from a consideration of all the cases which have come under Mr. Hutchinson's notice.

Third Series.—Case: This patient was a respectable small tradesman, forty-six years old, who came under Mr. Hutchinson's care at Moorfields Ophthalmic Hospital with double iritis. Examination disclosed the presence of a copious dusky rash and symmetrical ulcers in the tonsils. The ordinary questions as to syphilis were denied, and careful inspection of the genitals gave an entirely negative result. On one arm, however, two or three scabbed ulcers were found, as large as shillings, with dusky, indurated borders; and there was an indolent bubo in the corresponding armpit. He said that the sores on the arm had broken out at the seat of the vaccination-punctures. He had been vaccinated three months before admission; the punctures took, and behaved as usual; but when just healed over, a month after the operation, they inflamed and broke out into sores. About a fortnight later (six weeks after vaccination) the rash appeared, and at the end of another month the iritis set in. The nature of the disease had not hitherto been diagnosed, and no specific treatment had been used; under the use of mercury both iritis and rash were cured. This man was seen by many medical men at the hospital during the two or three months of his attendance, and there could be no shadow of doubt about the nature of his malady. Although his vaccinator had not diagnosed this man's case, he had had much trouble with the arm-sores, which, from his subsequent account, would appear to have been at one time almost phagedænic. Besides the patient, about twelve others were vaccinated from the same baby, three of them being the patient's children, young adults; in these three no ill results have occurred; the remaining cases have not been pursued further (for prudential reasons detailed in the paper), but the vaccinator believes that none of them had any trouble, save one or two in whom a little difficulty occurred in the healing of the vaccination spots. The vaccinator said that the baby used appeared in excellent health at the time. When seen by Mr. Hutchinson at eight months old, it was fat and well grown, the only sign of inherited syphilis being the markedly sunken bridge of the nose—a symptom to which the author attaches considerable importance, and from which he predicts with some confidence the future occurrence of confirmatory events. The child was the third and the only living one, the first two having died in infancy. In favour of this man's syphilis having been gained during vaccination, we have the occurrence of induration, &c., in the vaccination scars at exactly the interval which is known from former cases to elapse between inoculation with syphilitic virus and the formation of the chancre; the occurrence of axillary indolent bubo; the eruption and other secondary symptoms following the arm-sores at the proper period; and lastly, the total absence of any trace of chancre elsewhere, and the extreme improbability of syphilitic inoculation of the vaccine sores after the vaccination. Against this conclusion there are only the negative facts afforded by the apparent immunity (which may, however, yet be disproved) of the other persons vaccinated, and the slight evidence of syphilis in the

vaccinifer; the latter being what is to be expected, since no one would think of vaccinating from an obviously syphilitic child.

Fourth Series.—Case: A lady, about forty-five, who came to Mr. Hutchinson as a private patient in December, 1872, for a vascular growth from the urethra. During examination the remains of a copious, dusky, evidently syphilitic rash was found. On inquiry, she stated that she had been very ill after vaccination, and had had a severe rash and inflammation of one eye. Further examination showed the presence of a dusky scar at the seat of one of the vaccination-punctures, very different indeed from a normal vaccine cicatrix; synechiæ were also found in the left eye, proving past iritis. She was vaccinated in May, 1871, by four punctures, none of which took; just a month later one of them inflamed, and became a hard-edged ulcer, lasting three months. Two or three weeks later (about two months after vaccination) the rash appeared copiously, and she fell into ill-health. From the vaccination in May to the early part of September, she had no specific treatment, which probably accounts for the severity of the rash, &c. After this she took small doses of iodide of potassium and bichloride of mercury, under another practitioner for nine months, when she ceased all treatment, and went for two months to the seaside. At the end of this period her left eye inflamed (iritis), and the rash, which had been nearly well, relapsed. For the iritis she was treated at Moorfields Hospital by a colleague of Mr. Hutchinson, its cause and origin being suspected, but not followed out. It was several months after her admission to the hospital that she came under the author's care for a complaint having no connexion with the syphilis. She was vaccinated from a baby's arm, and, at the same time, her two grown-up daughters. A number of others had previously been vaccinated from the same child, but these have not been traced. The two daughters, however, appear to have escaped all contamination. The baby is said by the vaccinator and its own mother to have looked quite well at the time. As soon as dentition began, however, it had some very troublesome sores about the anus (? condylomata), for which it was under treatment three months at a dispensary. It is the third child. All are living. The eldest, a boy about six or seven years old, shows no signs of inherited taint; the second, a girl of five, now has a large forehead, and she had exactly the same sores about the anus and at the same age as the vaccinifer; the vaccinifer itself also now has a large forehead. The author calls attention to the fact that these two cases of vaccination-syphilis were not, as were the first and second series, sent to him because he was known to be interested in the subject, both of them having occurred in the ordinary course of practice. Several cases of supposed syphilis from this cause have been sent to him, but the diagnosis in these was not confirmed.

Conclusions and general remarks based on the four series of cases.—These are summed up chiefly as answers to certain questions. The author first asks: What are we to infer from the circumstance that when syphilis is conveyed in the practice of vaccination it does not affect all those vaccinated from the tainted source? And he answers: We must believe that the specific poison of syphilis is either not contained in the vaccine lymph at all, or is not equally diffused through it. Thus, in the first series of cases, two out of twelve vaccinated escaped syphilis;

in the second series, out of about twenty-six vaccinated more than half escaped; while in the third and fourth series only one out of at least twelve vaccinated from each vaccinifer is known to have been syphilized. It will be borne in mind, however, that the last two series have purposely not been followed up exhaustively, and that the proportion tainted with syphilis is not improbably greater than appears at present. Again, from the evidence of these series of cases there is no doubt that we may vaccinate from a tainted vaccinifer without conveying syphilis; and, on the other hand, it is possible to convey syphilis either with or without the production of a normal vaccine vesical. Vaccination from a child evidently syphilitic is known to have been done inadvertently several times without bad result, and probably it has often occurred without being known. These points of clinical evidence make it highly probable that the syphilitic virus is not contained in the vaccine virus, but is derived from, or associated with, some cell-elements of the blood, and probably these need not be visibly red. This is confirmed by experimental evidence, for syphilis has been successfully produced by inoculating the blood of a patient in the secondary stage; and in the case referred to the dates, &c., agree closely with those observed in the author's series. Next, need blood be used in vaccination in order to convey syphilis? The author thinks that probably it is enough if the material used has been mixed with colourless exudation from the blood, as occurs when the vaccine vesicle is allowed to drain in order to furnish more lymph. This is confirmed by the fact that the vaccinators in the cases in question asserted that they always scrupulously avoided making the vesicle bleed; in none of the instances is there any history that the lymph was visibly bloody; while it is well known that many men of large experience do allow the vaccine vesicle to weep. According to this supposition, as soon as the first contents of the vesicle are exhausted the risk begins. Third: If the syphilitic virus and the vaccine virus be implanted at one and the same time, what will be the course of events? If the patient is susceptible of vaccination the vesicle goes through its usual phases and heals, and nothing more happens till the end of a month, when the scar indurates and the chancre forms. In some cases, however, the vaccination sore never heals, and in these the scab somewhat obscures the characters of the chancre. Characters of the vaccination-chancre: It begins as a little, red, firm, glossy tubercle, which gradually increases in size and becomes harder. In about a fortnight it usually ulcerates, the sore giving off but very little discharge, and with a hard base and edges. If no mercury is given it may remain open several months; in one case it probably became almost phagedænic. Sometimes there is from the first a good deal of inflammatory effusion at the base of the sore, and much purulent secretion and scab on its surface; its specific characters may be thus quite hidden. These cases are generally in children. Treatment of the vaccination-chancre: Mr. Hutchinson feels no doubt that should a vaccination-scar take on the induration characteristic of a chancre, and should the other facts of the case corroborate the suspicion, it is the surgeon's duty without delay to commence the administration of mercury. The influence of mercury in retarding and greatly diminishing the severity of the primary and secondary symptoms was most marked in all those cases which came under care at an early period

(sixth week), as in the first series. Indeed, in this series the eruption was so retarded as to induce scepticism in not a few minds as to the correctness of the diagnosis; several of them, however, from five to seven months after vaccination, had undoubted, though mild, secondary symptoms. In the second and remaining series of cases, however, the disease was not discovered until much later, and most of them suffered very severely from secondary symptoms, the last two cases (third and fourth series) particularly so. As regards tertiary symptoms, it is yet too early to say anything concerning the primary and secondary symptoms. Mr. Hutchinson says:—"I cannot speak too strongly as to the vast apparent advantage of the mercurial plan. The lesson of the cases is very clearly opposed to the too prevalent modern doctrine that it is well to wait for secondary symptoms before commencing specific treatment, and would appear to indicate that the latter should be adopted as soon as ever the condition of the chancre permits of an accurate diagnosis." As regards *prevention*, Mr. Hutchinson thinks it of the first importance to diffuse the knowledge that vaccination-syphilis is possible widely amongst the Profession; until all medical men believe in it, and fear it, we shall still be very unsafe. It is important next to avoid vaccinating from children whose parents are not known to the vaccinator; and, further, to decline, for the most part, using all firstborn children, waiting until by the development of one healthy child a guarantee of freedom from taint on the part of the parents has been given. Lastly, the avoidance of blood-stained lymph and of recent exudation from the walls of the vesicle is a sufficiently obvious precaution, and needs no further mention.

Art. 150.—*Treatment of Syphilis by Hypodermic Injections of Calomel.*

By Drs. Pirochi and Porlezza.

(*Giornale Italiano delle Malattie Veneree;* and *The Lancet*, Nov. 23, 1872.)

The authors have recorded fifty-five cases in which they made use of calomel in subcutaneous injections, and they thus sum up the conclusions to which they have arrived:—1. Recurrence of the disease is less frequent with subcutaneous than with internal treatment. 2. Calomel is preferable to the sublimate and other salts of mercury which have been tried until now, on account of the less gravity and frequency of local and general accidents. 3. Injections with calomel should be performed on the external and central surface of the arm. 4. The syringe should be introduced with precision into the subcutaneous cellular tissue, and care should be taken that the point be not fixed into the thickness of the derm. 5. The best vehicle for the calomel is hydrate of gum-arabic. 6. The quantity of calomel used must vary between ten and twenty centigrammes (about two to four grains). 7. Painting with collodion is very effective. 8. There should be an interval of at least ten days between every two injections. 9. The injections should be discontinued if the first two produce little or no amendment.

Art. 151.—*New Treatment of Venereal Diseases and of Ulcerative Syphilitic Affections by Iodoform.*

Translated from the French of Dr. A. A. Izard, by Howard F. Damon, M.D.

(Small 8vo, pp. 73. Boston, 1872.)

The following are the author's conclusions:—

"1st. That iodoform is a therapeutic agent producing more certainly and more promptly than all the others ordinarily employed the cicatrization of ulcerative syphilides in general, under whatever form they present themselves.

"2nd. That in the treatment of soft chancre, iodoform is in some sort a specific by the promptness with which it produces cicatrization without pain.

"3rd. That in the treatment of simple or virulent buboes (non-syphilitic), iodoform can be employed in the form of an ointment, as a resolvent, during the early stage, with more success than the blister and tincture of iodine; during the period which succeeds to the opening of the bubo, no other medicament can be compared with it for the rapidity with which it brings about the cure.

"4th. In all the preceding cases, when the suppuration is abundant, it is preferable to commence the treatment by the solution of iodoform in glycerine and alcohol; iodoform in powder ought to be employed in the second place.

"5th. Iodoform acts not only as a topical agent, but still further as a local anæsthetic. The rapid cicatrization which takes place is due, 1st, to the simplicity of the dressing which does not irritate the diseased parts; 2nd, to the absorption of the secretions by the iodoform powder; 3rd, to the antiseptic properties of the medicament, above all, when it is dissolved in alcohol and glycerine; 4th, to the presence of iodine which acts favourably on all venereal ulcerations in general.

"6th. Iodoform appears to us to be completely incapable of arresting the progress of phagedænism.

"7th. The employment of iodoform in cases of syphilitic affections should never dispense with internal treatment."

Art. 152.—*On Precocious Syphilitic Affections of the Osseous System.*

By Dr. Ch. Mauriac.

(*Gazette des Hôpitaux*, 1872; *Annales de Dermatologie et de Syphiligraphie*, No. 2, Tome iv.)

1. Epicranial periostites constitute one of the primary manifestations of syphilis. They sometimes come on in a few days after the infecting chancre, and before the appearance of the secondary symptoms.

2. They seem to be seated exclusively in the cranial periosteum, and, if there exists a hyperæmic or inflammatory lesion of osseous tissue, this latter is accessory and remains subordinate to the periostitis.

3. The epicranial periostites proceed from a true inflammatory condition and are due to active irritation, as is indicated by the acuteness of the symptoms and by their rapid course.

4. In the adult subject of acquired syphilis, these kinds of tumours of the periosteum have a tendency to resolution, either spontaneous or caused by appropriate treatment. They then disappear rapidly and leave no traces.

5. In the infantile subjects of hereditary syphilis the process of the pericranial tumour does not take or quit rapidly the irritative and resolvent for the nebrobiotic and suppurative course.

6. Pericranial periostites are the seats of fixed pains and the starting-points of radiating pains of a neuralgic form.

7. The periostites may be discrete or confluent, and occupy principally the anterior half of the cranium. When left to themselves, they last for a period varying between four and six months. Under an appropriate treatment they disappear sooner.

8. In the commencing stages of general syphilis periostites may form on the ribs, the costal cartilages, and the sternum.

9. The sterno-chondro-costal, like the pericranial periostites, are inflammatory, and may become the seats of fixed pains and the starting-points of radiating neuralgic pains.

10. As the centres of pain the former periostites play a considerable part in the dyspnœa of the early phases of syphilis. This kind of syphilitic asthma may, however, have other causes.

11. Periostites and exostoses may be developed at other points of the osseous system in the early stages of constitutional infection.

12. In taking as the starting-point of the incubation of these osseous lesions the commencement of the infecting chancre, I found that the shortest period of incubation was 15 days, and the longest period 120 days.

13. These periostites may make their appearance several days before the appearance of the so-called secondary cutaneous and mucous affections; they occur spontaneously and independently of the influence of any exciting cause.

14. They would seem to proceed from a kind of syphilis in which the part played by the virus is less active than that of the individual.

15. The tibia is the most frequent seat of periostites.

16. These precocious osseous lesions are more common and more severe in hereditary than in acquired syphilis, and among the African Arabs and the inhabitants of South America than in our climates.

17. The precocious periostites in acquired syphilis are almost always resolvent, and manifest themselves in a more or less marked inflammatory form. The process of periostites of the limbs is generally less irritative than that of pericranial periostoses.

18. They may get well spontaneously; but they disappeared more rapidly under the influence of a combined treatment with mercury and iodides, and of local antiphlogistic applications.

19. They aggravate the prognosis of syphilis, although they may coexist with slight manifestations in other organs, and may not be complicated by any malignity in the local processes or in the tendencies of the constitutional malady.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 153.—*Treatment of Lesions of the Scalp.*

By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital.

(*The Practice of Surgery: a Manual.* London: 1872.)

Under all circumstances and conditions scalp wounds should be carefully cleaned with tepid water, the utmost gentleness being used; their edges may then be adjusted and maintained in position, when not extensive, by strips of plaster, but in extensive lacerations sutures are far preferable to any other form of practice. The hair should be cut off in the neighbourhood of the wound, and the head kept cool. One caution, however, must be observed in the application of the suture, and that is not to include the aponeurosis of the occipito-frontalis muscle, for there is more danger of setting up mischief in the cellular tissue beneath this tendon when this practice is adopted than when the sutures simply pass through the skin itself. The kind of suture is unimportant, although many surgeons prefer the metallic. All sutures should be removed on the second day, as wounds of the scalp heal rapidly.

ART. 154.—*Two Cases of Compound Depressed Fracture of Vault of Cranium, Treated, in the Absence of Grave Symptoms, without Operation.*

Under the care of Mr. W. JOHNSON SMITH, at the Seamen's Hospital, Greenwich.

(*The Lancet*, February 1.)

CASE 1.—Afred T., aged eight years, was admitted into the hospital on August 8th, 1872, shortly after a fall from a height of about ten feet. He had lost much blood before admission, and was in a state of combined shock and concussion, but could be readily roused. Over the inner portion of the right parietal bone, and near the coronal suture, was a large, irregularly-shaped wound of the scalp, with jagged edges, which were widely separate, and exposing a considerable portion of bare bone and a well-marked, depressed fracture, running from behind forwards and inwards. At the upper portion of the left temporal region, and extending horizontally from before backwards, was a deep wound, which, however, at no part of its extent involved the whole thickness of the scalp. At the time of admission there was slight ecchymosis of upper eyelid on the right side. This increased very much in the course of two hours, and completely closed the eye; no subconjunctival hæmorrhage on this side. In the course of the night the patient became quite sensible, but was restless and very irritable. Vomited about two hours after admission, and again early on the following morning. The wound on the left side was closed by sutures, and wet compresses were applied over both wounds and across the forehead.

August 9th.—Was quite sensible during the whole of the day, but still

remained very restless, frequently turning from side to side, and keeping all the limbs flexed. No return of vomiting. Temperature 99° F.; pulse 112.

The patient then progressed very favourably, and without presenting any symptoms of cerebral mischief. The superficial wound on the left side speedily closed; but in that on the right side, which was associated with the fracture, there was at first much suppuration, which diminished in the course of a week, but did not entirely cease until the second week in September, when a large granulating surface had closed by cicatrization, and the bare bone about the line of fracture had been detached by exfoliation, and removed in numerous small pieces. On Sept. 12th, when the wound was almost completely closed, the boy had a sharp attack of erysipelas of the face and scalp; but after this had passed off he rapidly improved, and on October 5th was discharged as cured, both wounds being quite closed, the situation of that on the right side being marked by a large, dense, and depressed cicatrix. The boy has frequently attended as an out-patient, according to instructions, but up to the present time (January 8th) has shown no bad symptoms either of a general or local character.

Case 2.—William R., aged thirty-two, a muscular and apparently healthy sailor, was admitted on November 6th, 1872, with injuries to head and left shoulder, received three days previously, when he had been thrown down on deck by a heavy sea, his head coming in contact with a large iron bolt. The injury to the shoulder, though merely a contusion accompanied with pain over the deltoid and partial loss of power in this muscle, was the chief cause of the patient's application for admission, and very little attention seemed to have been paid by him to a large wound on the left side of the head, which was covered by a thick layer of coagulated blood, on the removal of which the following condition was presented:—On the left side of cranium, three inches and three-quarters above the left pinna, was a scalp wound extending directly from before backwards for a distance of two inches and a half. The edges had retracted considerably, and were inverted; the whole thickness of the scalp had been involved, and at the bottom of the wound was a considerable extent of bone, white and perfectly bare. This exposed portion of bone was found to be depressed to the extent of about one quarter of an inch below the surface of a jagged margin of bone, which extended from above downwards at the anterior extremity of the scalp-wound, the line of fracture curving downwards and backwards under the lower flap of the wound, and making its appearance again as a slight fissure near the posterior extremity of the wound. The depressed and bare portion of the bone was also marked at the middle by a simple depression of the outer table, resembling in size and form an impression made on soft material by the bowl of a teaspoon. The fractured portions were firmly fixed, and no mobility could be made out on pressure with a director. The patient stated that he had not suffered from headache since the day of the accident, that he had not had any vomiting, and that his health had not been disturbed.

The patient was ordered to keep to his bed and to take low diet. Water dressing was applied to the wound, and the portions of scalp immediately around the edges were shaved. The raw surfaces, which at first were

dry and showed no tendency to healthy reaction, speedily improved in appearance, and became covered by rapidly cicatrising granulations. The wound speedily contracted; and, after the removal of three large portions of necrosed bone on December 9th, closed completely. He was allowed to get up on December 12th; and on the 30th day of the month was discharged as cured.

During the whole period that the patient was in the hospital no bad subjective symptom of any kind was noticed. He frequently complained of being kept in bed for what he regarded as a trivial injury. The temperature was never higher than 99°·4, and on four days only was above 99°. The pulse, taken while the patient was lying down, varied between 72 and 88. During the first week of the patient's stay in the hospital there was great difference in the frequency of the pulse in the positions of lying down and sitting up in bed. In the former position it was about 88; in the latter 115. Shortly before his discharge there was a difference only of 16 beats. No change was ever observed in the action and relative condition of the pupils.

Art. 155.—*On Deep-Seated Abscess near the Angle of Lower Jaw.*

By Dr. Von Thaden, of Altona.

(*Mittheilungen f. d. Verein Schleswig-Holsteiner Aerzte*, Heft 4, 1872; *Schmidt's Jahrbücher*, No. 10, 1872.)

The author relates eighteen cases of a deep-seated lateral inflammation of the neck, to which very many names have from time to time been given. By Leube and Roser it has been called *cynanche sublingualis;* by Stromeyer, *fibrinous diffuse phlegmon near the lower jaw;* by Metzler, *sporadic gangrene of the cervical cellular tissue;* by Bamberger, *inflammation of the cervical cellular tissue;* by Emmert, *deep diffuse inflammation of the cervical tissues;* by Nélaton, *deep-seated phlegmon of the tibial cervical regions;* by Breithaupt, *cervical abscess behind the angle of the lower jaw.* These authors describe the symptoms of the affection with much unanimity, and recognise as the seat of the inflammatory process, the deep intermuscular cellular tissue. Very slight, if any, mention, however, is made of the lymph-glands, which are found in considerable numbers and of large size in this region.

Dr. Von Thaden regards the large group of lymph-glands which exists near the angle of the lower jaw as the chief centre of the inflammation, and holds that an early and deep incision into this is free from danger. His views are based upon eighteen cases which were observed by him in the course of eleven years.

Symptoms and Course.—There appears near one angle of the lower jaw a swelling of the size of a hen's egg, the integument over this tumour remaining almost quite normal. If moveable over the angle of the jaw, it remains so only for a short time; it is hard, and its boundaries may be either well defined or slightly indistinct. This swelling may be seated near the submaxillary gland or, as more frequently occurs, further backwards below the parotid gland, and under the upper half of the sterno-mastoid muscle, the anterior margin of which is displaced outwards.

In all the eighteen cases recorded by the author the patients were

adults, fifteen being between twenty and forty years of age, and three between forty-seven and sixty-five. Eleven of the patients were males and seven females. In twelve cases the swelling was on the right side, in six cases on the left. Eleven of the cases occurred in the cold season of the year, and seven in the warm season. Generally a previous affection was observed in the posterior half of the mouth on the corresponding side; in eight cases difficulty of swallowing or slight inflammation of the tonsils; in four cases pain in the posterior inferior molar teeth (twice in the wisdom tooth, in one of which cases there was pain in the ear). In one case there was nasal catarrh.

The tumour, which at first is not particularly tender and often devoid of much heat, may remain unnoticed for a few days. It afterwards extends forwards and downwards, and the structures of the submental region and over the thyroid cartilage, and sometimes those between this and the dorsale become very hard. All the contours of the neck disappear, and a thick swelling is observed extending from the cheek downwards over the neck. The mouth cannot be opened beyond a small extent, as the swelling restricts the range of movement of the lower jaw. The swelling extends into the mouth on the side affected; the space between the tongue and the molar teeth is occupied by an œdematous, dark red and soft tumour, and the tongue partially infiltrated and œdematous is elevated on the corresponding side, and cannot be moved without pain. The utterance of consonants in which the root of the tongue takes part can scarcely if at all be effected. The tumour may extend inwards and so give rise to serious symptoms. Pressure on the vessels of the neck accounts for headache and slight unilateral swelling of the face, and pressure on the boundary between the pharynx and œsophagus for the difficulty which sometimes increases to the impossibility of swallowing. There is danger of the disease involving the entrance to the trachea, the epiglottis and the arytæno-epiglottidean ligaments, and of the mucous membrane becoming swollen in consequence of the œdema surrounding the purulent centre. This is indicated by hoarseness passing into stridulous breathing. The disquietude on account of the difficulty in breathing, which often increases very much in the evening, generally results in sleeplessness. Convulsive attacks of dyspnœa like those of croup have been recorded by some surgeons, but were not observed in Dr. Von Thaden's cases.

The back of the neck always remains free, the swelling never extending beyond the posterior margin of the sterno-mastoid muscle.

The skin covering the affected parts often retains for a long time its normal colour. Œdema and heat come on sooner or later; redness was observed in six cases only. Fluctuation is always indistinct. In four instances the author could feel in the hard tumour, generally between the sterno-mastoid and the thyroid cartilage, a soft spot from half to two centimetres in size, at which in one case a spontaneous opening formed, and the redness of the skin had commenced. Even at this soft spot the purulent deposit is covered by a layer of tissues two centimetres in thickness. In some cases the author gave exit to pus by incision without being able to feel any fluctuation.

The patient having been put under the influence of chloroform, an incision is first made parallel and along the margin of the sterno-mastoid,

the course of which must often be conjectured according to the origin and insertion of the muscle; the knife is then carried into the tissues for a depth of two or three centimetres, and a grooved director then thrust in towards the supposed centre of the swelling. Along the groove of this director creamy and inodorous pus will now generally flow; in two of the author's cases it was fetid, and in one fatal case ichorous and watery. The quantity varies much in different cases, after extension of the incision with a blunt-pointed bistoury, the finger is passed into the cavity, generally under the sterno-mastoid and between this muscle and the greater cornu of the hyoid bone, sometimes so deeply that the index finger is wholly covered and comes in contact with the transverse process of the atlas or another of the upper covered vertebræ. This was done in four of the author's cases. The cavity is generally irregular, being composed of several small connected cavities, and traversed by bands. In one case the cavity of the abscess extended from the ramus of the lower jaw to the base of the skull. In two cases a patch of bare bone of the size of a shilling was found on the inner surface of the body of the lower jaw; in both those cases there had been pain in the corresponding wisdom teeth. The author in his operations was not able to make out with the finger the condition of the lymph-glands, as these had been converted into a semi-fluid material. In one case only did he succeed in removing a brownish-red lymph-gland of the size of an almond, which had been disintegrated in consequence of the effusion of blood and pus among its tissues; it lay between the submaxillary gland and the jaw. The author could feel deep pulsation in these cases, twice on the inner side of the disease, once on the outer side, and it was doubtful whether this could be due to the internal carotid. Why the pulsation of the internal carotid cannot be felt in these operations, the author explains by the fact that this artery is covered on the outer side by the distended internal jugular vein.

The bleeding in the author's cases was generally slight and of no great importance. In one case it was necessary to tie the facial artery.

The incision is generally followed by relief in the symptoms affecting respiration, deglutition, and speech, and by capacity of free movements of the head and tongue: the anxiety and restlessness also abate. In no cases did renewed formation of pus necessitate reopening of the wound. In two cases the patients succumbed.

If the head be kept at rest the wound will generally close at some period between two and eight weeks, generally in six weeks. In two of the author's patients, servant-maids who were careless about themselves, suppuration continued for six months; in one of these cases the swelling returned with dyspnœa and cyanosis.

Subsequent long-continued hardness of the deep-seated tissues near the angle of the jaw was not observed by the author in any of his cases.

Of the eighteen patients two died. One of these was a man, aged fifty-nine years, who sank from septicæmia within ten days. The second was a tubercular man who succumbed to erysipelas and pyæmia six weeks after an incision had been made. Dr. Von Thaden believes that death in cases of this kind is sometimes due to suffocation through œdema of the glottis.

Concerning the question whether *bubo* or *phlegmon* be the primary

lesion in this affection, Dr. Von Thaden found no information in previous records of post-mortem examinations. To no author did it seem that adenitis at the angle of the jaw was analogous to suppurating buboes in the groin or axilla. Dr. Von Thaden points out that in the *region* below the *upper extremity of the sterno-mastoid* where the pus is generally formed, there may usually be found a great number of lymph-glands. In fourteen subjects of various ages he counted from ten to twenty of these glands on one side, in two subjects more than twenty, and in one subject forty glands. This group of glands, which are called by Henle the glandulæ cervicales profundæ superiores, contains more glands than the groups in the arm-pit and groin, though it is not so large. The glands vary much in size, the largest lying on the internal jugular vein and in the furrows in front of and behind this vessel. The other glands, smaller in size but more numerous, lie further backwards. This group of lymph-glands surrounds the internal jugular vein and forms from without backwards a semicircle which ceases at the inner or mastoid side where the carotid artery and vagus and sympathetic nerves are found, together with some scanty cellular tissue. In two cases only has the author seen lymph-glands to the inner side of the great vessels, and never more than two, the lymph-glands seated below the upper margin of the thyroid cartilage, and therefore below the bifurcation of the carotid, being excluded in this enumeration. The glands lie between the salivary glands and the lower jaw, and between the sterno-mastoid muscle and the hyoid bone; above they are bounded by the posterior belly of the biventer cervicis; they are generally imbedded in fat, containing cellular tissue; they cannot always be readily prepared for examination, but in consequence of their darkened colour and enlargement in small-pox, are very manifest in subjects who have died from this disease. The anterior margin of this group of glands can be readily felt in children in consequence of the laxity of the cellular tissue surrounding their cervical organs, which has not yet become condensed into fasciæ. It is only in adults, that one finds tense sheaths around the sterno-mastoid muscle and the submaxillary gland, and small tendinous bands extending from the fascia of the sterno-mastoid to the angle of the jaw. In adults the platysma too often becomes as thick as the orbicular muscle of the eyelids and even thicker. When therefore inflammation of this group of glands occurs in an adult, the swelling will soon undergo compression by surrounding osseous, muscular, and fibrous structures. Anterior to this group lies one of three or four lymph-glands enclosed within the fasciæ of the submaxillary salivary gland.

The question concerning the *priority of adenitis* or *phlegmon* cannot be sufficiently and conclusively determined. Peripheral lymph-glands frequently inflame. Adenitis occurs more frequently in the neck than in other parts of the body; and if the different subcutaneous collections of cellular tissue in the human body be arranged with respect to their proneness to inflammation and suppuration, then those which contain lymph-glands will certainly take first rank.

The especial point in deep-seated acute maxillary buboes is the impetuosity of the local phenomena, which is not observed in cases of subcutaneous lymphadenitis; the mobility of the round swelling is altogether wanting or disappears early, the skin covering the swelling reddens late;

suppuration occurs early. The red streaks along the skin, which are characteristic of cutaneous lymphangitis, and which connect the affected portion of skin with the swollen gland, are wanting. A pre-existing affection at another spot in the region associated with the lymph-gland is common to buboes, with phlegmon it is not constant.

The reason why the excessive swelling of the cervical glands in diphtheria does not cause much disturbance of respiration may lie in the laxity and the yielding nature of the cellular tissue of children, which allows sufficient space for the swollen lymph-glands to extend forwards, and also in the usually short duration of life in cases of this disease.

Hæmorrhage from one of the large cervical vessels has not hitherto been observed by any one in cases of the affection. Suppuration of deep-seated cervical lymph-glands has in rare cases caused erosion of a large vessel and a fatal result. Advena saw erosion of a large artery in two children; Bloxam, suppuration of the internal jugular vein, after scarlatina in five children. Castelain has reported seven cases of ulceration of the large cervical vessels; in one of these the internal jugular vein, and in three the carotid artery, were affected.

Treatment.—In the first stage rest in bed, ice, purgatives, cataplasms, &c. On account of the early exhaustion of the patient through want of sleep and failure of the nutritive functions, Dr. Von Thaden is opposed to the practice of repeated leeching, urgently recommended by Stromeyer, after twenty-five years' experience. The author recommends that an incision be made without waiting for fluctuation, and he has no doubt that when one penetrates at the anterior margin of the sterno-mastoid, the whole thickness of the abscess of the swollen lymph-glands lies between the point of the knife and the dreaded large cervical veins. With respect to the proper time for making the incision, one may wait until the speech or respiration is disturbed. Too early incisions do not generally bring about any good result, and never relieve the patient; in cases of phlegmon, on the other hand, every incision is usually advantageous.

Art. 156.—*On Cysts of the Jaws.*

By M. Magitot.

(*Archives Générales de Médecine*, Avril, 1873.)

1. Spontaneous cysts of the jaws in all instances have their starting-point in the dental system.

2. Almost all the recorded cases are conformable to this explanation.

3. The few rare examples of cysts of the maxillæ which seem to form exceptions to this rule, are given in reports wanting in sufficient detail for establishing the pathology, or reports failing in scientific exactitude.

4. The existence of cystic disease of the maxillæ and of essential nature, having no etiological relation with the dental system, has not hitherto been proved.

5. The development of cysts of the jaws takes place by two different processes:—

(*a*) The embryonic period, that is to say, within the follicle itself, the proper walls of which form the cystic sac.

(*b*) In the adult period, below the dental periosteum which covers the fang, this periosteum being elevated and constituting the wall of the cyst.

6. Cysts of the jaws contain, in addition to the liquid or semi-liquid mass with which they are distended, solid material, consisting sometimes of fibrous or fibroid substances (embryo-plastic cysts of the follicle), sometimes of hard bodies, dentinary discs or grains, which may or may not be regularly crowned (odonto-plastic and coronary cysts of the follicle); at other times, finally, a fang denuded and penetrating by its summit into the cystic cavity. The sole exception to this rule relates to certain embryo-plastic follicular cysts in which there had been at the commencement of their formation a breaking down or absorption of the constituent parts of the affected follicle.

7. Cysts of the follicle, resulting from disturbances in the nutrition of the organ, are developed sometimes on the normal place or seat of the primitive follicle (simple follicular cysts), sometimes on some other point of the jaw than the alveolar margin (heterotopic follicular cysts).

8. Cysts of the dental periosteum are always produced around a fang occupying its normal situation. They are never heterotopic.

9. Besides spontaneous follicular or periosteal cysts, one may in the maxillæ meet with cysts developed around a foreign body. These are the perigenic cysts of Broca, or encysted foreign bodies of the jaws.

10. In a very great majority of cases, cysts of the jaws are curable by simple opening of the pouch and by exciting contraction of the cavity.

11. Resection and disarticulation of the maxillæ ought to be reserved for some rare cases in which the very extensive development of a cyst has reduced considerably or destroyed completely the osseous tissue of the affected jaw.

ART. 157.—*On the Prevention and Arrest of Hæmorrhage in Operations on the Tongue.*

(*Schmidt's Jahrbücher*, No. 12, 1872.)

Dr. Lesser (*Deutsche Zeitschrift für Chirurgie*, 6, 1872) gives the following account of Prof. Hueter's operations for tying the lingual artery :—

Hueter searches for the artery internal to and behind the hyo-glossus muscle, by which the vessel is separated from the more superficial lingual vein, and from the hypoglossal nerve. Here there is a triangular space, the lingual trigone, bounded externally by the posterior belly of the digastric muscle, internally by the outer free margin of the mylo-hyoid muscle, and above by the hypoglossal nerve; at the bottom of this triangle may be seen the hyoglossus muscle, the fibres of which run from without and below, inwards and upwards, crossing those of the mylo-hyoid. Over the triangle lies the facial artery. In the operation the surgeon cuts through the skin and the platysma myoides at the upper margin of the greater cornu of the hyoid bone, commencing over the insertion of this cornu into the body of the bone, and carrying his incision outwards for three or four centimetres. The lower margin of the submaxillary gland, lying in its covering of connective-tissue, is now exposed; this gland having been drawn upwards and some layers of connective-tissue divided, the lingual trigone with the hypoglossal

nerve is exposed. This nerve and also the lingual vein having been drawn upwards as well as possible, the hyo-glossus muscle is divided by forceps in the course of the fibres. The artery is then exposed and can be readily ligatured. It is necessary for the head of the patient to be held backwards during the operation, and for the chin to be turned from the operator.

This method of operating was practised in the following cases :—

1. As a preliminary proceeding before extirpation of a cancroid growth from the right side of the tongue. During the operation not a drop of blood flowed from the cut surface of the tongue. On the fourteenth day the patient, who was almost completely cured, was discharged from the hospital.

2. On account of lymphangeiectasis of the right side of tongue. Here the operation was performed in order, as in elephantiasis of one of the lower extremities, to lessen the pressure of the lymph current, and the dilatation of the lymph vessels by deligation of the chief arterial trunk. At the end of a fortnight the wound was healed and the right half of the tongue had considerably collapsed, but it remained somewhat larger than the left half.

3. As a preliminary proceeding in extirpation of an epithelial growth of the right half of the tongue. During the removal of the disease there was very little hæmorrhage, and this was chiefly venous. The patient was discharged cured on the fourteenth day.

4. As a preliminary proceeding in extirpation of an epithelial growth of the whole of the right half of the tongue, which involved the attachment of the right glosso-palatine arch, and spread from this to the floor of the oral cavity and the gums of the right molar teeth. On the stump of the extirpated half of the tongue there were two small bleeding arteries, but the hæmorrhage from these was arrested by the application of ice and liquor ferri.

Professor Schmidt, of Leipsic (*Archiv für Heilkunde*, ix. p. 391), reports the following cases in which the lingual artery wasted preliminary to extirpation of the anterior half of the tongue :—

There was a large crater-shaped ulcer at the apex and much thickening of the epithelium of the whole of the anterior portion of the tongue. The tongue having been dragged forwards with hooked forceps, at a distance of one centimetre from the posterior boundary of the disease the tongue was traversed by two loops of thread, which were applied for the purpose of keeping the organ under control, and of bringing together the raw surfaces after the operation. By means of the hooked forceps the tongue was dragged forcibly upwards so that its lower surface and the region of the frænum were accessible. At the lower surface of the tongue, immediately above the caruncula sublingualis, and at a distance of one centimetre and a half from the middle line on the left side, a curved needle armed with a stout thread was thrust into the tongue and towards its right margin, near which, and at a distance of one centimetre and a half from the frænum, it was made to protrude. The soft parts included in this loop were then drawn together and the ligature tied in a knot. After the excision it was found that the surfaces of the wound could not be applied to one another, so a large raw surface was left to heal by granulation. No open and

bleeding vessels could be seen after the removal of the diseased portion of the tongue; in the evening the saliva was free from blood stains, and white. On the twelfth day the thread was divided and removed. The patient complained of great difficulty in deglutition after the operation. This symptom disappeared after the removal of the ligature.

Art. 158.—*Notes of a Case of Malignant Tumour in the Parotid Region.*

By Henry Arnott, F.R.C.S.

(*British Medical Journal*, March 8.)

At a meeting of the Clinical Society of London, February 14th, Mr. Henry Arnott read the notes of a case of soft malignant tumour in the parotid region of a man, aged thirty-five, cured by caustics. The patient had first come under his notice nearly five years ago, with a soft infiltrating brain-like tumour bulging from the neck below the left ear. Repeated severe hæmorrhage had brought the man into a state of great peril. He was admitted into the Middlesex Hospital; the common carotid artery was tied, and Mr. Moore commenced to destroy the fungating mass with chloride of zinc paste. The treatment was continued from time to time for more than twelve months, Mr. Hulke finishing the case after Mr. Moore's death. The man finally left the hospital with a sound cicatrix, and there has been no return of the disease since. Mr. Arnott introduced the patient to the meeting. He was a wiry small man, working hard all day as a stableman; and, by his own statement, no longer feeling anything of the painful mass, which seemed likely to kill him speedily five years ago. Mr. Arnott directed special attention to the encouragement afforded by such a case as this to those surgeons who are disinclined to attempt other treatment than clean incision in cases of cancer, and dwelt upon the importance of repeated attacks upon returning nodules of the disease. He also pointed out that the cachectic look—once very marked in this case—had completely disappeared with the relief of the local ailment.

Art. 159.—*Notes of Two Cases of Thyrotomy.*

By Pugin Thornton.

(*British Medical Journal*, March 8.)

At a meeting of the Clinical Society of London, February 14th, Mr. Pugin Thornton read a paper on two cases of thyrotomy for the removal of growths from the larynx. The first case was that of a man, aged twenty-four, a woolstapler at Halifax, whose voice, in December, 1868, became slightly hoarse, and in the following month aphonic. Three years later he came under Dr. Morell Mackenzie's care, and at that time his voice was almost suppressed and his breathing affected. With the laryngoscope, great thickening of the left ary-epiglottic fold, and slight ulceration of the left ventricular band were seen. The lungs were perfectly healthy. In the beginning of 1872 Dr. Mackenzie found

the whole of the larynx covered with large vegetations. He was wearing a tracheal canula; tracheotomy having been performed six months previously by Mr. Charles Smith, of Halifax, on account of suffocative dyspnœa. He was now admitted into the Hospital for Diseases of the Throat, and thyrotomy was performed by Mr. Thornton. Growths were found attached to all parts of the laryngeal mucous membrane, which were removed with cutting forceps, and nitrate of silver applied to their bases. The left ary-epiglottic fold was seen to be much thickened. The canula was not returned until the second day after the operation, when it had to be replaced in the trachea, on account of the difficulty of breathing. Microscopical examination of the growths showed them to be of an epitheliomatous character. Six weeks after the operation dysphagia came on; and two months later, on examining the patient, the left arytenoid cartilage was observed to be displaced, and it was evident that perichondritis had taken place. From this time the difficulty in swallowing rapidly increased; and from the end of October to the time of his death (Dec. 14th), he had to be fed through the œsophageal bougie. No post-mortem examination was allowed.

The second case was that of a boy, two years and a half old, admitted into the Throat Hospital under the care of Dr. Semple on June 11th, 1872, suffering from stridulous breathing, and there was some lividity of face. It was said that from his birth his cry had been weaker and harsher than that of other children; and that when two years old he had had "a severe attack of croup," after which his voice was much harsher, and his breathing slightly stridulous. At the time of his admission his respiration was so oppressed that he could not walk across the room, and it was difficult for him to get any sleep at night. Dr. Semple discovered with the laryngoscope a number of small warty growths on both vocal cords. Five days after the child's admission, the dyspnœa having become suddenly severe, Mr. Thornton performed tracheotomy; and two days later, at Dr. Semple's request, having removed the canula, he carried the incision up through the cricoid and thyroid cartilages. The divided portions of the cartilages and the trachea being held back, several warty excrescences were found. On each vocal cord there were also two small growths on the mucous membrane below the right vocal cord. These were removed, as in Case 1, and the parts brought together with silver sutures, the tracheal canula not being replaced. The child passed a good night, and slept with his head low. A month after the operation his voice was tried and found harsh and feeble; his breathing was normal. He was soon afterwards made an out-patient. On December 13th, however, his breathing became slightly stridulous; and on January 10th, tracheotomy had to be performed for the second time. Mr. Thornton remarked that there was no doubt that recurrence of the growths had taken place in this case, although, from the child being frightened from previous operative measure, it was impossible to make a laryngoscopic examination. He also remarked upon the difficulty of effecting complete removal by thyrotomy. The author observed that he should not be prepared to recommend the operation in a case similar to the first, which was one undoubtedly of cancer. In this instance it was undertaken on account of the aphonia making it impossible for the patient to

gain his livelihood. In speaking of the second case the author thought the operation appeared more justifiable, the tender age of the patient having rendered laryngoscopic treatment impossible: nevertheless, as in the cases of Dr. Gouley, Dr. Voss, and Mr. Davies-Colley, recurrence had taken place.

Art. 160.—*Observations on Diffuse Inflammation of the Areolar Tissue of the Neck (Cellulitis.)*

By Henry Gray Croly, F.R.C.S.I., Surgeon to the City of Dublin Hospital.

(*Dublin Journal of Medical Science*, May 1.)

Several urgent cases of this nature having been under Mr. Croly's care during the last few years, he feels considerable interest in the subject, and deems it of sufficient moment to claim the particular notice of the profession; and, considering the vital importance of the various structures implicated in deep-seated inflammation of the neck—viz., the contents of the submaxillary region, the base of the tongue, the larynx and trachea, œsophagus, great vessels and nerves, the affection has not, in the author's judgment, received that amount of *special* attention by surgical writers which it imperatively demands. The symptoms are urgent and alarming, and if relief be not afforded by prompt and bold surgical aid, the patient may be suffocated; and even under the best surgical skill, the complication of blood-poisoning and its fatal effects unhappily frustrate the best-directed efforts of the surgeon. This serious affection occurs as the result of exposure to wet and cold, or from some obscure and constitutional cause, such as occasions erysipelas and other zymotic diseases at special seasons. The attack is ushered in by rigors, lassitude, headache, thirst, and other symptoms of fever, pain in the neck and loss of sleep. The parts engaged soon become swollen and tense, conveying to the touch the sensation termed "brawny," indicating infiltration of fluids into the under-lying areolar tissue and inter-muscular spaces. There is pitting on pressure, especially in the mesial line, over the larynx and trachea (*without fluctuation*); dyspnœa and dysphagia next become urgent symptoms, increasing much the sufferings of the patient, and foreboding danger. The breathing is stridulous, the voice whispering, and the countenance assumes a very anxious expression, the forehead being wet from drops of cold sweat. The patient feels much exhausted, dreads choking, and, from being unable for several days to swallow solid food, or even fluids (the latter regurgitating through the nose), soon loses strength, and danger to life becomes imminent. The platysma muscle, in its cellular sheath, with the layers and reflections of the cervical fascia, bind down, with much tension and mechanical resistance, the subjacent infiltrated and swollen tissues, and consequently exert painful compression on the root of the tongue, the larynx and trachea, œsophagus, vessels, and nerves.

Art. 161.—*Fracture of the Trachea.*

By Edward Drummond, M.D.

(*British Medical Journal*, December 28, 1872.)

The singularity of the following accident induces Dr. Drummond to report it. He was sent for to a middle-aged woman, who, while hanging out some clothes, slipped off the chair on which she was standing, and fell forwards against its back, from which the top rail was missing. She fell forcibly, and struck the trachea against a sharp upright spindle. Dr. Drummond found considerable contusion of the surrounding parts, and an abrasion over the trachea. The cartilaginous rings were crushed; there were slight expectoration of blood and extreme general emphysema. A large compress of cotton-wool was applied over the part, and retained *in situ* by straps of plaster. She made a good recovery in about ten days.

Art. 162.—*Report of a Case of Tracheotomy Performed twice on the same Subject.*

By William Stokes, Surgeon to the Richmond Hospital.

(*Dublin Journal of Medical Science*, December, 1872.)

As Mr. Stokes is not aware of any case in which the difficult and hazardous operation of tracheotomy performed *twice* on the same subject has been recorded, the particulars of the following one must, doubtless, be considered of much surgical interest.

"Bridget H., aged thirty, was admitted into the Richmond Hospital under my care on January 16th, 1871. The patient contracted syphilis about eight years ago. Constitutional symptoms followed the attack, and the larynx became affected. About fifteen months previous to her admission she suffered from an acute attack of laryngitis, for which she was treated by Mr. Fleming. She was brought under the influence of mercury, which temporarily relieved her, but subsequently the dyspnœa became so excessive that tracheotomy had to be performed. After the operation the case progressed very well; the tube was removed, the wound healed, and the patient eventually left the hospital quite free from all laryngeal distress. For nearly twelve months after this operation the patient enjoyed tolerably good health, but about six weeks before her second admission into hospital she began to be affected as before. Her breathing became difficult, her voice hoarse, and she suffered also from persistent cough. On admission her symptoms were very urgent: she had constant dyspnœa with orthopnœa, stridulous and harsh respiration, troublesome cough, extreme pain referred to the larynx, hoarseness, dysphagia, great anxiety of countenance, and considerable constitutional disturbance. These symptoms increased at night, when violent paroxysms of dyspnœa frequently occurred. The symptoms were so very urgent that a laryngoscopic examination was not considered feasible. On

January 20th I determined that the performance of a second tracheotomy was the only course open in order to save the patient's life. I accordingly performed the operation. I had very great difficulty in introducing the tube, owing to the violent paroxysms of dyspnœa (one of which was very nearly proving fatal), the struggles of the patient, the great depth and mobility of the trachea, its great contraction, a condition probably resulting from the first tracheotomy, and the copious venous hæmorrhage. These difficulties, however, were overcome, chiefly owing to the employment of Von Langenbeck's double tracheotomy hook, an instrument which is as simple as it is ingenious in its construction, and the tube was introduced. This was followed by immediate relief. The respiration continued during the day quite quiet. Occasionally the inner tube became clogged with mucus, which was easily removed with a feather brush. On January 27th, the double tube was removed, and Thompson's bivalve trachea tube substituted; the patient being free from all distress, the breathing quite regular, the pulse quiet, and the appetite good. On February 8th the patient left the hospital, still wearing the tube, since which date she has frequently presented herself for examination as an extern patient."

From Mr. Stokes' experience in this and other cases, he can confidently recommend the double tracheotomy hook of Von Langenbeck, as a thoroughly practical and useful instrument.

Art. 163.—*On Laryngotomy, Thyrotomy, and Tracheotomy.*

By F. W. Hamilton, M.D., Professor of the Practice of Surgery, Bellevue Hospital Medical College.

(*Principles and Practice of Surgery.* Pp. 943. New York. 1872.)

Laryngotomy, practised at the crico-thyroid space, is preferable in all cases of apnœa from drowning, from the inhalation of mephitic gas, hanging, œdema glottidis, abscess, and ulcerations of the larynx, in most cases of intra-laryngeal growths, and whenever foreign bodies are lodged in the ventricles.

Thyrotomy, with or without incision of the crico-thyroid ligament, may be substituted for laryngotomy, so-called, in certain cases of intra-laryngeal growths, when, in the opinion of the surgeon, it would be difficult to remove these formations safely and thoroughly without having at the moment a perfect view of their attachments.

Tracheotomy above the isthmus of the thyroid gland is to be preferred in all cases of diphtheria and of croup, when the gland is not in a condition of hypertrophy. Tracheotomy below the isthmus will be reserved, therefore, for those rare examples of diphtheria or croup accompanied with hypertrophy of the thyroid gland, and for those equally rare examples in which the surgeon undertakes the removal of foreign bodies impacted in either the right or left bronchus.

Art. 164.—*Conjunctival Transplantation for the Cure of Symblepharon.*

By J. R. Wolfe, M.D., Surgeon to the Glasgow Ophthalmic Institution.

(*Glasgow Medical Journal*, February.)

The palpebral and ocular conjunctiva are sometimes destroyed by burns, or the action of chemical substances, &c., resulting in adhesion of the eyelid to the eyeball. It is often difficult to permanently separate this adhesion so as to allow of the free motion of the lid over the ball. Dr. Wolfe states that for the last few years he has practised a plastic operation of the conjunctiva for the radical cure of this morbid condition.

"I take," he says, "a portion of the neighbouring healthy conjunctiva of the eyeball, wherever I can get it, to supply the palpebral conjunctiva which has been destroyed. For experience has taught me, that loss of conjunctiva oculi, even to a very large extent, is generally regenerated without prejudice to the neighbouring tissues, whilst loss of the conjunctiva of the eyelid is followed by such disastrous results as pannus, ulcerated cornea, &c., &c."

In one case which he relates, he observes, "I dissected carefully the eyelid from the eyeball, separating it as far as the cul-de-sac, to make quite sure that I had liberated the eyeball completely. I then passed two fine silk threads through each side of the conjunctiva at the outer aspect, which ligatures marked the breadth of the conjunctival flap to be removed. These two I put on the stretch, and with a pair of scissors I first cut horizontally, and then on each side of the ligatures, then, putting the scissors behind, I cut it from the eyeball. In cutting the flap on the stretch by means of the ligatures, I take care that the conjunctival flap is removed without any of the sub-conjunctival tissue. The same process is followed at the inner side, and these two flaps are brought together in the middle line, and secured with stitches."

The operation proved successful, there resulting free movement of the eyeball with scarcely any perceptible trace on the latter where the flaps were borrowed.

"There is a limit," he admits, "to the extent to which we may go in borrowing conjunctival substance from an eye which has already been injured. If we surpass that limit, the corneal opacity is sure to extend still further, and we lose the last chance of saving vision. Indeed, we sometimes meet with cases in which the infliction of a new wound amounts to the destruction of the eye." He therefore, in a case of very extensive symblepharon, tried to supply his patient with conjunctival substance from a rabbit. Accordingly, he operated, Nov. 3rd, 1872, in the following manner: "Both patient and rabbit being put under chloroform, I separated the adhesions, so that the eyeball could move in every direction, and, everting the lower eyelid and turning it downwards, I took from the rabbit that portion of the conjunctiva which

lines the inner angle, covering the *membrana nictitans*, and extends as far as the cornea, the portion to be removed having been previously defined by four fine silk threads, which enabled me at the same time to transfer it quickly to replace the lost conjunctiva palpebræ of the patient, in which place it was secured with stitches."

On Nov. 7th the ligatures were removed. "Patient remained in the hospital for a week, during which time he was carefully noted by me, my assistant, and students. The eyelid remained separated through its whole extent, the eyeball moveable in every direction, while the transplanted palpebral conjunctiva retained its vitality, as shown by its red appearance and comparatively smooth surface. There was only one grey spot, the size of a pin's head, visible. Was dismissed on the 11th Nov. He returned three days ago, last Tuesday, Dec. 3rd. The eye was found in a satisfactory condition. The conjunctiva has a healthy look, the free motion of eyeball maintained, which enabled me at once to make an artificial pupil."

Dr. Wolfe has operated with success on another patient, whose case, however, was not so aggravated as the first.

Art. 165.—*Treatment of Strumous Ophthalmia.*

By Henry Power, F.R.C.S., M.B., Lond.; Senior Ophthalmic Surgeon to St. Bartholomew's Hospital.

(*Practitioner*, October, 1872.)

Mr. Power finds that general treatment is by no means sufficient to cure the patient, and amongst the many local remedies he has used, he gives the palm to atropia, in a two or four grain solution, Pagenstecher's yellow ointment, and calomel. With one or the other of these, most cases, he says, may be cured.

"Cases, however, occasionally occur in which all these plans of treatment fail, and the question comes, what must now be tried? It is then that I claim attention to the value of extract of belladonna given internally. I have repeatedly found that it rapidly diminishes the intolerance of light, and by its power of relieving the spasm of the muscles closing the lids, enables the child to obtain an amount of benefit from air and exercise that was previously impossible. I can entertain no doubt that its good effects are attributable to its action as a stimulant upon the sympathetic system of nerves, and through this upon the smaller vessels. It is further of use in doing away with the necessity for purgatives, as even in small quantities it acts efficiently in clearing the bowels. I have usually prescribed it in doses of one-eighth to one-quarter of a grain. It is perhaps scarcely necessary to add that, as it is a potent remedy, its effects must be watched, and its administration should be suspended as soon as the child complains of thirst, or when the rapidity of the pulse is observed to be increasing. I have only noticed these symptoms in one or two instances. I have also found the extract of belladonna serviceable in cases where the affection was rather

a limited keratitis than phlyctenular ophthalmia; that is, in which a small segment of the cornea was hazy and vascular near the margin, even though the intolerance of light may not have been very intense. I consider the seton, though recommended by so good an authority as Mr. Bader, a *pis aller;* and find the treatment mentioned by Dr. Swanzy as practised by Von Gräfe, though it was originally suggested by Jüngken, of dipping the whole head for a few seconds in cold water, not persistent in its effects."

Art. 166.—*A Contribution to the Surgery of Divergent Squint.*

By C. R. Agnew, M.D., New York.

(*Transactions of Medical Society of State of New York.* Albany. 1872.)

In this paper Dr. Agnew gives an account of an ingenious method of shortening the rectus internus, in cases of divergent squint:—

"The method . . . . is one in which the internus is detached from its sclerotic insertion, drawn forward, shortened, and made to adhere again to the sclerotic, without attempting to lift and advance the overlying conjunctiva and capsule of Tenon. The patient having been profoundly etherized, and the eye to be operated upon held open by means of a spring speculum, an incision is made from the nasal end of the horizontal meridian of the cornea, back through the semilunar fold to the caruncle. This incision is best made with scissors, and should be carried down through the conjunctiva and capsule of Tenon upon the internus midway between its borders. The externus of the same eye should now be divided, access being made to its insertion through a conjunctiva wound tangent [Qu. *secant?*] to the cornea. . . . . This can easily be done without cutting off in any great degree the nutrition of the cornea, as is the case where the wound is made parallel to the corneal border. The next step is to get control of the internus so that it can be easily handled. This is accomplished, not by forceps, but by using a strabismus hook. . . . . The free end of the hook, drilled with an eye and armed with a waxed ligature, is made to pass as one would pass an ordinary hook beneath the tendon, going so far back as to secure any adventitious bands. As the hook is withdrawn, the ligature is left in place, and the tendon, at its sclerotic insertion, firmly tied. With scissors, the tendon is then detached from the sclerotic, and drawn out of the wound. . . . . Two sutures for the advancement of the muscle are then placed . . . . by curved needles, handled by some convenient needle-holder, like that of Prof. Sands. The sutures, well waxed, should transfix the muscle at as great a distance from the end of the tendon as the degree of divergence would seem to require. It is difficult to make an inflexible rule for this, but we have commonly found that the distance should be about one-fourth greater than the linear measurement of the divergence, except in cases where said divergence exceeds four lines, in which event the needles should transfix the muscle as far

back as the carbuncle will allow. The sutures having been placed in the muscle, the next step is to carry them beyond the conjunctiva, and if possible, beneath the capsule of Tenon, and out above and below the cornea at the termini of its vertical meridian. . . . . It now remains to cut off the end of the tendon, as held in the ligature, leaving a line or two of muscular tissue to prevent the sutures from tearing out, and to tie first the upper suture, and then the lower one with such manipulations as would serve to spread out the advanced tendon beneath the corneal end of the conjunctival wound, and over that portion of the sclerotic to which it is hoped it will adhere. The eye should be strongly and accurately adducted during these manipulations, by catching the scleral remains of the cut tendon of the external rectus in forceps, and so turning the cornea, without tilting its horizontal meridian, well over into the internal canthus."

Art. 167.—*Practical Remarks on the Treatment of Cataract.*

By G. Critchett, F.R.C.S., Senior Surgeon to the Royal Ophthalmic Hospital.

(*Medical Press and Circular*, Dec. 18, 1872.)

The question upon which the chief differences of opinion exist amongst ophthalmic surgeons have reference chiefly, 1st, to the size, form, and situation of the wound; and 2ndly, to the performance of an iridectomy.

As regards the size, Mr. Critchett thinks it will be generally admitted that in old persons with hard fully-formed cataracts, it should be of sufficient extent to allow the exit of the lens without force. In respect to form, it should be curvilinear, representing a segment of a circle about double the size of the circumference of the cornea. Upon both these points there is probably considerable uniformity of opinion amongst operators. The two next questions, viz., the tissue in which the section should be made, and whether an iridectomy should be performed, involve some considerable differences of opinion. As regards the tissue, we have to determine whether the section shall be in the cornea or in the opaque white tissue that constitutes the border land between the cornea and sclerotic (a structure that varies much in extent in different subjects), or whether the two extremities of the wound shall be in the white fibrous tissue, and the central part in the transparent cornea. At first sight this may seem like hair-splitting, but in reality it involves an important principle. Some contend that one of these tissues unites with greater rapidity and certainty than the other, and to determine this, extensive and carefully drawn statistics are required. It is generally acknowledged that the cornea is much more prone to take on suppurative inflammation than the opaque tissue, and that cæteris paribus a wound of this latter heals better than in the cornea. As a proof of this we may appeal to the ordinary operation of iridectomy, which, so

far as the operation is concerned, enjoys a remarkable immunity from risk, large statistics showing a loss of not more than one in five hundred cases. A similar wound inflicted on the cornea would give far less favourable results. The fair inference from this would seem to be that if we could limit the section exactly to this opaque tissue, making it of such a form and size as would permit of the free exit of the cataract, we should obtain more favourable results than in a corneal wound, and Mr. Critchett is disposed to think this is correct; but there are certain risks in this operation that it is well to consider. They are chiefly three—1st. Greater liability to escape of vitreous humour; 2nd. Proneness to secondary iritis; and 3rd. *Possibility* of sympathetic ophthalmia. The reason of the first of these accidents is usually some spasm and pressure at the moment of the exit of the lens, or a long residence of the cataract in the eye, involving toughness and opacity of the capsule, atrophy of the ciliary ligament, and a fluid state of the vitreous humour. Secondary iritis usually depends upon some bruising of its tissue at the moment of exit, or some fragments remaining in the papillary area, or a constitutional proneness to fibrous inflammation after wounds, aggravated by entanglement of the cut angle of the iris in the wound. Sympathetic ophthalmia (fortunately an exceedingly rare occurrence) is probably due to an encroachment of the section upon the ciliary nerves, and a consequent bruising of that highly sensitive tissue during the transit of the hard cataract. All three contingencies may be usually avoided when they are fully recognised—the chief source of danger being not so much the seat of the wound as *the point of puncture and counter-puncture;* these being very liable without care to encroach upon the ciliary region. In order to avoid this, a greater curve may be given to the wound, so as to make it represent a larger segment of rather a smaller circle, in such a manner that the puncture, the counter-puncture, and the remainder of the wound are in the opaque tissue close to the cornea, and at a safe distance from the ciliary ligament, exactly in the situation where iridectomy is performed. It may be argued that in this way we are departing too much from the curvilinear and returning to the semicircular form of section, but although this may be in some measure true, it is unimportant when combined with iridectomy, and when situated in this opaque fibrous tissue, in which the edges keep well together and are generally aided by a conjunctival flap. Mr. Critchett believes that in a majority of cases, this method of operating, if carefully carried out in all its details, will give the best results, and has many advantages over a corneal operation. Under the most favourable circumstances, however, the warmest advocates of this method must admit, as an inevitable result, the permanent mutilation of the eye by the loss of a portion of the iris, the frequent occurrence of opaque capsule, and a certain amount of irregular astigmatism. In stating the case for curvilinear extraction with iridectomy, as finally bequeathed to us by Von Graefe, and in advocating its advantages, Mr. Critchett only claims it for a majority of average cases, and he states he should entirely fail in carrying out the objects of this paper were he not to put in a plea for the corneal section.

There are many who prefer the operation of Graefe with the modification of a corneal instead of an opaque fibrous section, limiting the fibrous

part to the puncture and counter-puncture. Time and large experience can alone determine this point. It seems to Mr. Critchett that such an operation retains the objections and misses some of the advantages of the Graefe method. If the puncture and counter-puncture are beyond the limits of the cornea, the danger is not increased by making the remainder of the wound in the same tissue, so long as it be not permitted to encroach upon the limits of the ciliary region. If therefore it be determined to adopt the corneal section, it seems to the author that the operation described by M. Warlomont offers strong arguments in its favour. The section is curvilinear, it is made entirely in the corneal tissue by means of the needle knife, it is nearly painless, and may be performed without the use of an anæsthetic; it is comparatively easy of execution; it does but very little violence to the eye; it is seldom attended with prolapse or synechia; and if it quite succeed, leaves the eye with a circular small pupil, an almost invisible cicatrix, and good optical conditions. Secondary capsular opacity is rare. Mr. Critchett advises this method of operating to be preferred in every case to the old flap operation, which he thinks should now be altogether abandoned. It seems to be indicated in the following cases—1st. Wherever the modified linear extraction has failed in one eye; 2nd. Wherever both eyes are operated upon at the same time one should be treated by this method; 3rd. Whenever the patient is unable or unwilling to take chloroform; 4th. In persons but little past middle age, in whom the cosmetic result is important, and where it is desirable to obtain the highest optical effect; 5th. Where the cataract is not quite mature, and likely to be sticky, or to leave fragments behind; 6th. In cases where distance renders a secondary operation for the division of capsule difficult or even impossible; 7th. Where the anterior chamber is small and the circumference of the iris is close to the cornea so as to preclude a satisfactory curvilinear section through the opaque tissue between cornea and sclerotic. The objections and sources of danger in this method are the same in kind though not in degree as the old flap operation. There is—1st. The risk of suppuration of the cornea or even of the globe; 2nd. Prolapse of the iris, though in consequence of the curvilinear form of the wound this is of necessity small and easily dealt with, and not incompatible with very fair vision; 3rd. There is anterior synechia—the iris may fall forward and attach itself to the edges of the corneal wound. This, of course, mars the perfection of the eye, but leaves a clear pupil and a good optical result. Whilst Mr. Critchett far from believing that this operation will ever supersede the one known as that of Von Graefe, he is of opinion that it commends itself strongly in those cases indicated above, and, if judiciously selected, will diminish our average of failures.

Art. 168.—*Methods of Operating for the Extraction of Cataract.*

By John Green, M.D.

(*St. Louis Medical and Surgical Journal*, Nov. 1872.)

Dr. Green, by request of the St. Louis Medical Society, gave a short sketch of a few points in Ophthalmology which had come under his

notice during his recent visit to London, in attendance upon the International Ophthalmological Congress.

With regard to the methods of operating for cataract, he said: "The commanding authority of Professor von Graefe, during the latter years of his life, forced, as it were, upon the whole profession his peculiar operative method for the extraction of senile cataract. With the exception of very few operators, conspicuous among whom may be mentioned Professors von Hasner, of Prague, and Williams, of Boston, the 'peripheric-linear' operation of Von Graefe had come to be practised by all the world, and was regarded by many as the crowning perfection of this branch of ophthalmic surgery. The two years which have elapsed since Von Graefe's death have sufficed to change the practice of nearly all Europe in this operation, and it may safely be said that the 'peripheric-linear' operation, performed strictly according to the rules so carefully laid down by its author, is already almost a thing of the past. Not but that great results have sprung from the grand enthusiasm and untiring zeal of the great master, in perfecting this his last gift to the profession, for to him, more than to any other surgeon living or dead, we owe the present emancipation of the ophthalmic art from the restraint of authority, and in nothing more than in the manner of operating for cataract.

"The practice of the leading ophthalmic surgeons of Europe to-day would seem to show that the precise form and position of the external incision, and the performance or non-performance of iridectomy as a part of the operative procedure, are matters which are rather to be left in each case to the enlightened judgment of the surgeon, than to be settled beforehand according to any general rule."

Art. 169.—*Section of the Orbicular Muscle and Integument at the outer Canthus, as a prelude to Extraction of Cataract.*

By Edwin Chesshire, F.R.C.S., Senior Surgeon to the Birmingham and Midland Eye Hospital.

(*Medical Times and Gazette*, April 12.)

Before operating for extraction of cataract, Mr. Chesshire has recently been making a section at the external canthus through the fibres of the orbicular muscle and the integument, and he has found so much advantage from the proceeding that he submits the plan to his professional brethren, in order that it may be more fully tested. He has done only five extractions on this method at present, but in every case complete success has resulted. The advantages attending section of the orbicular muscle at the outer canthus are—more extensive exposure of the globe, which enables the operator to manipulate his instruments and to make the corneal section with greater ease; the spasmodic contraction of the orbicular muscle being overcome, the operator is left to complete his operation at his leisure; while all risk of sudden protrusion of the lens, followed as it sometimes is by prolapse of the iris and escape of the

vitreous, is almost entirely avoided; and the contraction of the lids on the globe, which is sometimes a troublesome symptom in the after-treatment of cataract extraction, is prevented.

With division of the orbicular muscle, the wire speculum, which greatly facilitates each step of the operation, may be used without injury or annoyance to the patient. No sutures are required; the divided surfaces readily unite, and scarcely leave a trace of the section. All that is necessary to be done is to keep the eyelids nicely in apposition for a few days after the operation by means of strips of court-plaster.

The operation is done as follows:—A wire speculum is placed between the lids, to enable the operator to make his section through the muscle and integument at the outer canthus with precision and ease. Mr. Chesshire makes no allusion to the mode of extracting, as the plan he proposes is equally applicable to all extractions; he always uses Graefe's knife, and Graefe's or Liebreich's operations are selected as may seem most suitable to the particular case. He never uses chloroform or ether in extraction, as the sickness which so frequently follows their administration far outweighs any advantage that may otherwise result from the use of anæsthetics during the operation; and with the orbicular section, the globe being so much more under control, they are still less required. Where great neatness is desired, the section may be made subcutaneously.

Art. 170.—*On a Peculiar Form of Iritis which occurs in the Children of Gouty Persons.*

By Jonathan Hutchinson, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields.

(*The Lancet*, January 4.)

Recently, in the investigation of cases of iritis in connexion with gout and rheumatism (the arthritic diathesis) Mr. Hutchinson's attention has been attracted to a peculiar form of the malady which has, he believes, not as yet been described. Its subjects are usually the immediate offspring of those who have suffered from true gout. The iritis occurs at an early age, and differs from the other forms of arthritic iritis in being insidious and persistent rather than paroxysmal. Without any attack of acute inflammation, adhesions quietly form between the iris and the capsule of the lens. These gradually increase in number, the pupil becomes first excluded and afterwards occluded, and, as a last stage, effusion behind the iris completes the disorganization of the eye. Mr. Hutchinson has as yet observed it pass on to complete destruction of sight in only a single instance. In the later stages he believes that opacities in the vitreous usually form, but, owing to the blocking up of the pupil, it is not always easy to demonstrate them. The malady in question usually begins in but one eye, and advances to almost entire loss of sight in it before attacking the other. Ultimately, however, both are almost always affected. Although Mr. Hutchinson asserts strongly that it differs from all the common types of arthritic iritis in having no

paroxysms, and in being insidious, and for the most part painless, he by no means intends to deny that it is liable to exacerbations and periods of improvement. Thus the patient will usually complain that the eye feels hot and uncomfortable at the time that the adhesions are forming, and sometimes there may be a slight and transitory congestion of the conjunctiva. These symptoms of inflammation are comparatively rather than absolutely absent. Mr. Hutchinson has thus far found the disease remarkably intractable under treatment.

Art. 171.—*Anatomical Investigations on Typical Retinitis.*

By F. E. Landott.

(*Archiv für Opkthalmologie*, xviii., 1872; *Schmidt's Jahrbücher*, No. 10, 1872.)

The author has had opportunities of removing and examining the eyes of two patients, one aged sixty and the other forty years, who during life had presented each a typical example of pigmented retina with complete blindness. The result of the examination was briefly as follows:—

The principal changes had taken place in the retina; here there was an almost total disappearance of all the nervous elements, especially the rods and cones, and excessive growth of connective-tissue, both in the ciliary apparatus and about the walls of the vessels. The walls themselves were so much thickened as hardly to allow the passage of blood-corpuscles along the canals of the vessels; the finest branches were completely enveloped in connective-tissue. In the walls of the vessels was found transported and probably also newly formed pigment, which was partly free and partly enclosed in cells. The pigment of the epithelial layer had to a great extent been removed from the layer and the cells, and been collected at isolated spots in a typical manner conditioned by the course of the retinal vessels, extending through the retina at many points as far as a vessel. The choroid was slightly or not at all changed. These, then, were cases of pure primary retinitis which had commenced as perivasculitis in the periphery, and resulted in degeneration of the vessels gradually extending towards the centrum. The thickening of the walls of the vessels is a primary and the migration of pigment is a secondary process, as is also the substitution of newly formed connective-tissue for nervous elements. The author insists that this process is very similar to that of cirrhosis, and it is remarkable that both these subjects had succumbed to cirrhosis of the liver and kidneys.

Art. 172.—*On Affections of the Retina in Traumatic Fever.*

By Dr. M. Roth, of Greifswald.

(*Deutsche Zeitschrift für Chirurgie*, i. 5, 1872.)

1. *Embolic panophthalmitis* was first known as the so-called "milk metastasis" in connexion with puerperal fever. After the Vienna

school recognised the "milk" as pus, a pyæmic or phlebitic ophthalmiæ was frequently recognised in association with other suppurative processes (after amputations, caries of the petrous bone, inflammation of the umbilical vein), and the choroid was shown to be the original seat of the infiltration. The cases of panophthalmitis with severe rheumatism, first described by Bowman, then remained obscure, but the discovery by Virchow of capillary embolism led to a correct explanation of this affection. It was shown that masses detached from the inflamed endocardium might be arrested both in the vessels of the choroid and those of the retina. Even puerperal panophthalmitis has without doubt an embolic origin of this kind. Dr. Roth found one of such cases exulceration of the endocardium, considerable plugging of the branches of the retinal artery, and consecutive suppuration in the bulb, in addition to diphtheritis of the uterine mucous membrane and effusion of pus in several joints.

2. *Septic retinitis* occurs more frequently than the above-mentioned form, and moreover is relatively benign, since it gives rise only to small white deposits, which consist of thickened nerve fibres, and connective-tissue corpuscles in a state of fatty degeneration, and occur in connexion with extravasation of blood into the retina. Virchow was the first to describe this affection. He found it existing once in a case of compound fracture, and once in a case of senile gangrene. Dr. Roth has collected records of nine autopsies. In all these cases ichorous deposits were present in the soft parts or in the joints, or there were indications of putrid bronchitis, suppurative pericarditis, pleurisy or peritonitis. The embolic character of this form could not be demonstrated; externally the eyes were healthy.

Art. 173.—*Treatment of Polypi of the Ear.*

By W. B. Dalby, F.R.C.S., M.B. Cantab., Aural-Surgeon to St. George's Hospital.

(*The Lancet*, Dec. 14, 1872.)

In undertaking the treatment of a case of polypus of the ear, it is well at once to recognise its possible tediousness, and the necessary perseverance that may be required both on the part of the surgeon and patient to effect its complete eradication. Mr. Dalby is of opinion that it is perfectly useless to remove polypi and to do no more. No sooner are they taken away than they at once commence to grow again, and for this reason their extraction should be regarded merely as the preliminary step in treatment. When the meatus has been syringed, light should be reflected from a mirror worn on the head as in using the laryngoscope; both hands will thus be free. The growth should be carefully examined with a probe to estimate, as nearly as possible, the exact spot from which it springs. If it be a large polypus, a speculum will not be necessary, and a convenient instrument to use is a Wilde's snare. The noose should be made of fine fishing gimp, as this runs more easily through the rings than wire. When it is placed round the growth, and the point of the snare pressed as close to the root as

possible, it should be made to cut its way through. If the polypus is not readily seen without a speculum, the largest one that the meatus will hold being placed in it, and the light reflected down it, the growth may be seized by a pair of rectangular ring forceps and pulled away. The root must now have a caustic regularly applied to it until it shows no further signs of regrowth. The caustic must be a strong one. Nitrate of silver is too weak. Potassa fusa and nitric acid are somewhat unmanageable, as they are apt to spread on to parts which it is not desirable should be touched. Mr. Dalby is in the habit of using chloroacetic acid on a small camel-hair brush, and applies it very freely. If the pain in doing this is severe it subsides immediately after using a syringeful of water. Eight or ten applications may be enough, but there can be no rule laid down for this. It is well to use it every day for a few times, and then less frequently. Having effected the complete eradication of the polypus, the further treatment will be the same as for an ordinary case of perforation of the tympanic membrane. As the discharge ceases the hearing improves, and the cotton wool must be worn when it is found to be useful.

Art. 174.—*Abscess of the Mastoid Cells; Spontaneous Evacuation, followed by Caries.*

By S. Henry Dessau, M.D.

(*New York Medical Journal*, May.)

The following case is interesting in regard to the kind and manner of termination of the abscess:—

Annie F., aged two years, was brought to Dr. Dessau's clinic at the New York Dispensary, August 2nd, 1871, to be treated for a puriform discharge from the left auditory canal, and from an inflamed opening at the upper portion of the temporal region, behind the auricle. The history that the mother gave was to the effect that an abscess had formed at the upper portion of the mastoid cells, some weeks previous to her presentation at Dr. Dessau's clinic, accompanied with great pain and deafness, and had opened spontaneously at the point before mentioned, a week or so before he saw her. At the time, there was an offensive discharge of pus, indicative of bone-destruction. The child presented numerous features of the strumous diathesis.

A probe bent to a curve was passed into the opening over the mastoid cells, and made its exit at the meatus, bone being distinctly felt during its passage.

Dr. Dessau placed the child upon the use of cod-liver oil, and injected Villate's lotion into the sinus, the injection escaping at the external auditory canal. This injection was repeated every other day, and in the meantime the mother was directed to use an injection of carbolic acid (20 drops to the ounce) twice daily.

Dr. Dessau saw the child for several weeks, and then lost sight of it for many months, when he finally had an opportunity of seeing the result of the treatment, the sinus had healed completely, the discharge from

the auditory canal had ceased, and the hearing on the affected side was almost perfect. This condition had existed for some time.

The following is the formula for Villate's lotion:—℞ Liq. plumbi subacet., ʒj.; cupri sulph., zinci sulph., āā ʒiv.; aceti, ʒvij. Dissolve the crystals in the vinegar, and add the lead slowly.

Art. 175.—*Fracture through the Petrous Bone into the Eustachian Tube; Commencing Inflammation of the Bone and Membranes; Recovery.*

Under the care of Mr. Jonathan Hutchinson, at the London Hospital.

(*The Lancet*, May 31.)

The following case, the notes of which are supplied by Mr. E. Nettleship, illustrates the difficulty sometimes met with in the diagnosis of a fracture of the base of the skull, and the importance of taking the evidence of all the symptoms, and not relying too implicitly on any one indication, which *per se* may or may not be evidence of such an injury.

Joseph N., aged twenty-two, a stoker, on May 10th, 1872, whilst under his engine for the purpose of cleaning it, raised his head without thinking where he was, and struck his left temple and the neighbouring part of the head violently against a horizontal iron bar just above. He was not stunned, but the part was painful, and soon swelled. There was no bleeding or discharge from the ear, mouth, or nose at the time. He went on working for three days. At the end of the third day he vomited a little blood, and on the same day the left ear became deaf and "started a-singing," which persisted. On the fourth day the left side of his face was more swelled and inflamed. Severe pain in the head came on, and kept him awake at night. The swelling of the face and side of the head appears to have varied a good deal in degree during the next few days. The pain, which was "shooting," was confined to the left side of the head, and specially marked in the temple and behind the ear; worse at night, but never quite ceased in the daytime. This symptom continued until several days after admission. On the eleventh day he noticed for the first time that he could not shut his left eyelids; and after this other symptoms of facial paralysis gradually came on. On the seventeenth day he came to the hospital, first to Mr. Tay, by whom he was sent to Mr. Hutchinson. He then had complete facial paralysis and absolute deafness on the left side, and was complaining of great headache. His appetite had failed for several days, probably from the headache. From the history of the accident and of the gradual onset of the symptoms, and from the absence of bleeding or discharge from the ear, Mr. Hutchinson diagnosed a fissure-fracture of the left petrous temporal bone communicating with the Eustachian tube, and thus allowing the admission of air, which had been followed by inflammation of the bone and its contained structures, and then by the paralysis. A very grave prognosis was given; but it was thought advisable to administer

mercury to rapid salivation, in order to prevent if possible further inflammatory effusion, and allow the absorption of that already present. Grey powder was ordered every four hours, and the patient was taken into the hospital.

For the first two nights his headache was less severe. On the second day after admission the bowels were freely opened by house medicine. On the third night, however, the pain was as bad as ever. After this date the headache almost left him, and did not return with any severity. The improvement began so soon after the mercury was begun that Mr. Hutchinson did not attribute it to the remedy. The patient never became salivated, and the mercury was discontinued on the fourth day. About ten days after admission a considerable fluctuating patch was discovered above his left ear; it gradually increased for about a week, and then slowly subsided, having never been tender or inflamed; it probably contained serous or bloody fluid, the result of the bruise. His hearing partly returned before he left the hospital.

He was discharged about three weeks after admission.

(B) CONCERNING THE TRUNK.

ART. 176.—*A Case of Injury to Upper Portion of Spinal Cord.*

By W. JOHNSON SMITH, F.R.C.S., Surgeon to the Seamen's Hospital, Greenwich.

(*Medical Times and Gazette*, March 29.)

Mr. Smith places on record a case of injury to the cervical portion of the spinal cord, which ended fatally on the thirty-seventh day, the autopsy failed to reveal any traces of damage to vertebræ, ligaments, or meninges, and there were no signs, macroscopic or microscopic, of effusion of blood within the cord itself. It seems very probable, Mr. Smith writes, that the immediate results of the injury were due to severe concussion of the cord, with sudden and temporary stretching of some of its fibres, which led to central softening, the inflammatory nature of which was indicated by the presence in the softened nerve-tissue of abundant granular corpuscles. Assuming that the most altered portion of cord, which was above the roots of the phrenic nerve, corresponded to the seat of the original lesion, it will be concluded, the author thinks, that the force of the injury must have acted principally on the soft central structures of the cord, and have left the firmer tissue at its periphery less seriously affected. Division of the cord at a spot so near the medulla oblongata, or compression of its whole thickness by a displaced vertebra or foreign body, would certainly have caused sudden death; on the other hand, severe traumatic lesions affecting the central parts and acting from within outwards are not, in any region of the cervical region, incompatible with some continuance of life. In a case recorded by Dr. Hughes Bennett,* a woman lived four days after an

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* "Clinical Lectures," second edition, p. 390.

injury to the back of the neck which caused sudden paralysis of all four extremities and of the trunk; after death was found a clot of blood immediately below the medulla oblongata.

Samuel H., aged forty-five, a thin and pale man, a marble-polisher by occupation, was admitted into the Seamen's Hospital, Greenwich, on Jan. 4th, 1873, at 8 A.M., with palsy of the trunk and limbs, the result of an injury to the back of the neck and head.

On the previous evening, at about half-past five, the man, in a state of intoxication, slipped from the platform of the Deptford Railway Station on to the line, a fall of three feet and a half. It was supposed that he fell backwards, and struck the back part of the head and neck. He was picked up in a state of insensibility, and carried on a stretcher to the nearest police-station, where he was kept until the following morning, his condition for some hours after the accident having been so critical, that it was thought an unsafe proceeding to disturb him further by a removal to a hospital.

The patient, at the time of his admission into the Seamen's Hospital, presented no marked symptoms of shock, and was able to give a full and clear account of his sensations, and of the manner in which he received his injuries. There was a slight abrasion on the forehead, but besides this there was no external mark of injury. The spines of the cervical and of all the inferior vertebræ seemed to be regular and in their normal position, and the patient could move his head in all directions, though slowly and with pain. Common sensation seemed to be perfect in the neck, and over the upper part of the chest in front to a transverse line drawn about two inches below the clavicles. In all parts of the body below this, and in all the limbs, there was total paralysis both of sensation and movement. On tickling the sole there was strong contraction of the muscles of each lower extremity, and flexion of the limb. Well-marked contraction of individual muscles of the thigh and leg could be produced by lightly tapping the subjacent integument. The lower limbs were slightly drawn up, and the forearms also were flexed. The respiration seemed to be wholly diaphragmatic, the movements taking place sixteen times to the minute. There were frequent attempts at coughing, with profuse discharge from the mouth of thin and frothy fluid. The pulse was 76, and the temperature in the axilla 97°·4. The patient complained of headache, a dull heavy pain at the back of the neck, and a sensation as of a very heavy body pressing over the pit of the stomach and the lower part of the chest. The skin over the sacrum was marked by a large circular and bright red patch of congestion. No urine had been passed since the accident.

The patient was placed on a water-bed, and the bladder emptied by a Holt's winged catheter, which was allowed to remain, a long elastic tube having been added, so as to carry off the urine continuously into a vessel placed on the floor.

On the following day, Jan. 5th, the patient was in much the same condition, the respiration, however, being not so difficult, and the expectoration not so profuse. He still complained of great pain in the head and across the lower part of the chest.

During the next four days there was marked improvement in the general condition; the appetite was good, and the patient slept well at

night. The breathing became easier, and slight inspiratory movements of the thorax were observed. The paralysis of the trunk and limbs still remained complete. Large superficial abrasions formed over the sacrum and over the inner surfaces of the thighs, above where they came in contact with the scrotum. These patches were frequently cleansed and dusted with powdered starch, and did not extend in depth.

On the evening of Jan. 9th the patient became feverish, and complained of much pain at the back of the neck, which prevented him from sleeping. The tongue became dry and brown, and the pulse, which on the 6th and 7th of the month was not higher than 68, rose to 88, and afterwards to 95. This febrile condition lasted for nine days, and on Jan. 17th, and the following days, was associated with increased flexion of the lower limbs and marked rigidity of the muscles. Strong reflex movements of the limbs could be produced by mere contact with the surface. The patient stated that the lower limbs were often suddenly drawn up, and that he was often disturbed by considerable movement in the water-bed on which he lay.

From Jan. 19th, when the febrile symptoms had quite disappeared, to Feb. 6th, very little change was observed in the general condition of the patient, and there seemed to be no great tendency to exhaustion. The thorax was moved slightly during inspiration, but the respiration was chiefly diaphragmatic; still a copious expectoration of frothy fluid, which was clear and thin; the appetite was good. The man, in consequence of the persistent tonic spasm of the muscles of the lower jaw, could take only fluid nutriment. The bowels were opened daily, loose motions being discharged in the bed. The tongue was clean and moist. Complaints were made of occasional severe pain at the back of the head, and of a constant dull pain over the stomach. The skin of the limbs and of the trunk below the nipples still remained quite insensible. The skin of neck and upper part of the thorax in front sensible, but normally so, and not tender when rubbed. The skin was very dry, and on the legs was covered by small scales.

On Feb. 7th there was a sudden and marked change for the worse in the condition of the patient. In the morning he talked somewhat incoherently, and towards the evening became very delirious. The pupils were much contracted, and there was strong spasm of the muscles of the neck.

On the morning of the 10th, at about four o'clock, there was a sudden attack of profound coma, with coldness of the surface and an absence of pulse. He remained in this state until midnight, when death took place.

The temperature (taken in the axilla) during the first five days after the accident rose steadily from 97°·4 to 100°. On the evening of the sixth it suddenly rose to above 103°, and for the next eight days was usually between 101° and 102° in the evening, with a fall each morning of about two degrees. From Jan. 18th to Feb. 5th there was a gradual fall to below 91°; from the 6th to the 9th there was an uninterrupted rise to 94°. The temperature taken between the toes was usually about one degree and a half below that of the axilla, and its fluctuations in this region followed very closely those of the axillary temperature.

During the whole progress of this case a winged catheter was retained

in the bladder, and the urine allowed to run off continuously. The urine never became thick or ropy; it remained acid until Jan. 30, when it became neutral. On Feb. 1st it was slightly alkaline, but on the following day was again acid, and afterwards remained so until the day of the patient's death. For the first week the urine was passed in large quantities, the daily average being 120 ounces; it afterwards diminished to about two pints and a half. No sugar was ever detected.

Art. 177.—*On Ovariotomy.*

By J. Marion Sims, M.D., Surgeon to the New York State Woman's Hospital.

(*New York Medical Journal*, December, 1872.)

Dr. Sims is of opinion that the death-rate is still too high, and, while the majority of operators are quibbling about the form of ligature or clamp, the great cause of death (septicæmia) is entirely overlooked. He proposes to puncture the cul-de-sac of the vagina behind the cervix uteri, and to pass a tube of some sort into the peritoneal cavity, to drain off any effusion that may take place in the cavity. This he recommends to be done as the final part of the operation. It cannot, he says, do the least harm, and may possibly be the means of saving life. If no discharge take place, it can be be removed *per vaginam* in a few days. He prefers silver-wire ligature to anything else as a rule.

Art. 178.—*Third Series of Fifty Cases of Ovariotomy.*

By T. Keith, F.R.C.S.E.

(*The Lancet*, November 16, 1872.)

Mr. Keith, who has now performed ovariotomy one hundred and fifty times, with eighty-four recoveries in the last one hundred operations, has published a statistical table of his third series of fifty cases. This table shows eight deaths in the fifty cases. Two died from obstructed intestine, one from acute septicæmia, and five from peritonitis. In two of these adhesions were considerable, in one moderate; while in five the tumours were non-adherent.

In nearly all the fatal cases the general condition of the patient was bad. They were all poor women, pretty much worked out, though the tumours were of only moderate size. The result in the 106th case was very disappointing. Everything was most favourable for a successful termination, yet the patient died from diffuse peritonitis, in a way Mr. Keith states he never saw before nor since.

In six of the fatal cases the clamp was used. In one, catgut ligatures to one ovary and clamp to the other; in another, the long ligatures of Dr. Clay. In nearly one-third of the cautery cases bleeding took place from large vessels, and ligatures were necessary. Many of the cases had been tapped once or oftener; and, as a rule, a manifest improvement in the general health followed the tapping. One had been tapped twenty times, another fourteen times, before operation, yet both made

excellent recoveries. Only one of the fatal cases had been tapped. It was that of a young girl dying from a suppurating cyst. Ovariotomy was performed a few days after, but it did not save her. Yet in this series, in other five as hopeless-looking cases of suppurating cyst with septic fever, operation was perfectly successful.

Except that the cautery has sometimes been used in dividing the pedicle, there has been little change in the way of operating or in the general management of the cases since last report. During the operation perhaps more care than ever is taken to tie every bleeding point; and it need hardly be added, that Lister's animal ligatures are now used. After operation the same precautions are taken in restricting the giving of food and stimulants, especially food.

As an anæsthetic, pure, dry sulphuric ether (Macfarlane's) made from methylated alcohol is always used, and with the best results, especially in the very feeble women. Of one hundred cases in which sulphuric ether has now been given, there have been only thirteen deaths.

Art. 179.—*On the Treatment of Psoas and other Large Abscesses.**

By John Simon, Esq., F.R.S., Surgeon to St. Thomas's Hospital.

(*British Medical Journal*, May 10.)

In reference to several cases of large chronic abscesses under his care, Mr. Simon remarked, "that the only real difference between psoas and most other abscesses due to diseased bone was, that its cause was deep within the body. If the diseased bone could be removed, the abscess would heal; but the bodies of the vertebræ were out of reach: the surgeon could only mitigate the symptoms, and leave the rest to nature. If the disease were only caries, a cure might result, with more or less angular curvature of the spine; but if necrosis were present there was no chance of a cure, the dead bone was not absorbed, its presence kept up a constant purulent discharge, and this led to anæmia, to albuminoid disease of the liver and kidneys, and finally to death from hectic and exhaustion.

"In all these cases of chronic suppuration, the amount of constitutional and visceral damage is closely proportioned to the amount of the discharge: the amount of the discharge is proportionate to the extent of the abscess-cavity, and this depends, to a great extent, on the time it is suffered to extend. The great point in the treatment of these cases is, as far as possible, to prevent the formation of a large pus-secreting cavity. If, therefore, there be any suspicion of the existence of deep suppuration, keep a sharp look out, and open the abscess as soon as you can detect fluctuation, unless the proximity of large vessels, or of other important structures, affords strong reasons for delay.

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* Abstract of a Clinical Lecture delivered at St. Thomas's Hospital, London.

"In situations where the progress of the disease can be watched, as, for example, in abscess of the knee-joint, the difference in the result, according to whether you let out the matter early or not, is very great. If the pus be soon evacuated, there is a fair chance of saving the limb, and even of regaining some motion in the joint; but if the incision be postponed, the joint soon becomes utterly disorganized, burrowing sinuses form, and the neighbouring soft parts become deteriorated by infiltration.

"There is, however, this serious difficulty in opening a psoas abscess. Perhaps it forms a large bulging tumour in the groin, yet the patient is fairly well; you cut into it, he at once becomes feverish, and in a fortnight is *in extremis;* then an ignorant person may reproach you with killing the patient. But, however well and strong the patient may appear, it is certain that this febrile condition will supervene sooner or later. It is inevitable. The longer it is postponed the worse it will be, since the cavity of the abscess will be larger. Be careful, then, always to explain to the friends of the patient that the operation is a serious one, but that the consequence will be more serious the longer it is delayed. The severity of the consequent fever may, however, be greatly mitigated by treatment. Ten days ago I opened a large dorsal abscess in a litte girl, now under my care. I made a free incision, a very large quantity of thick pus escaped, and air was not excluded, yet the child has hitherto had no fever, and appears quite comfortable. All this time the cavity of the abscess is shrinking; and if the fever should now appear, it would be far less severe than it would have been had it occurred immediately after the operation. I owe this satisfactory state of things to the local application of cold; directly the pus was evacuated, an ice-bag was applied, and has been continued since. I have succeeded equally well in a large number of similar cases, and I can confidently recommend ice as an incomparable antiphlogistic.

"Of course, if necrosed bone be present, the abscess will not entirely close; a mere sinus will, however, be left, which will not drain the patient to any considerable extent.

"As I have said, I do not take extreme precautions to exclude air. At present I am inclined to reserve my judgment as to the value of the carbolic acid treatment, or at least as to the theory on which it is based; it is not yet proved that bacteria are the cause of unhealthy inflammation. Certainly air, as air, does not cause inflammation; and emptying an abscess by aspiration does not prevent the inflammatory process in its cavity. Recent experiments do, however, show that bacteria pass very readily in water, and attached to moist things; and common experience teaches us that infection is much more likely to be carried by sponges and surgical instruments than by mere air. From my own experience, I do not think that air, if only ordinarily pure and dry, is such a poison to surgical wounds as some assert; but, whatever your theory may be, always carefully disinfect all surgical instruments, &c., with boiling water.

"Finally, I must qualify my advice with a caution: remember that fluctuation is not always due to pus. Open early all acute or chronic abscesses, but never cut into collections of blood or synovia. A bruise, in ill-conditioned subjects, may be followed by extensive extravasation

of blood, causing a fluctuating tumour which, if deep in the limb, might easily be mistaken for an abscess. If these extravasations be let alone, and treated with cold applications, they disappear, though they may take a long time about it; but an incision into one is generally followed by grave constitutional symptoms. If well-marked signs of inflammation appear, you must treat the swelling as an abscess; otherwise never open one.

"When you are dealing with chronic suppuration, always look out for the chronic cause. The tendency of inflammation is to subside, unless there be a stimulus of some sort present. A man was admitted here some time ago, with a deep wound in the gluteal region, caused by falling on a spike; the wound did not heal, and after some weeks, on careful examination, a piece of his trouser was detected at the bottom. So, again, there is a boy with disease of the knee-joint in my ward, whose leg has been saved entirely by attention to position. By extension of the limb, and pushing back the femur, we have greatly reduced the inflammation; and whereas the child was before rapidly becoming worse, he is now as rapidly mending. Always treat such displacements in young subjects early and carefully; mere dislocation of the parts will keep up irritation and suppuration, without the presence of any dead bone."

Art. 180.—*A Case of Unilocular Cyst of the Ovary Treated Successfully by Puncture through Wall of Vagina.*

By Dr. Tillaux.

(*Bulletin de Thérapeutique*, Janvier 30, 1873; *Gazette Hebdomadaire*, No. 12, 1873.)

The patient was admitted into the St. Antoine Hospital on April 16th, 1870. She was thirty-three years of age, and had always had excellent health. Early in the year 1868 she recognised the presence of a tumour occupying the right side of the hypogastrium. The continuous progress of the tumour and the pain which it excited in the neighbouring parts compelled the patient to enter the hospital. At the time of her admission she presented the following condition.

The abdomen was distended as at the fifth month of pregnancy. In the hypogastrium could be felt by palpation a smooth, elastic, heavy and fluctuating bilobed tumour. The vaginal examination permitted Dr. Tillaux to obtain valuable indications; the axis of the vagina was almost vertical; its anterior wall was normal, and its posterior wall presented at its most deeply seated portion a protrusion of the size of a hen's egg. Hypogastric palpation combined with the vaginal examination gave a very distinct sensation of fluctuation.

The uterus was elevated and immovable, the neck forcibly pushed backwards was in contact with the posterior surface of the pubis.

The bladder, which was flattened against the abdominal wall and the posterior surface of the pubis, could contain but little water. A rectal examination demonstrated that the anterior wall of the viscus was depressed and pushed into the concavity of the sacrum.

The case was diagnosed as one of cyst of the ovary confined in the small pelvis and fixed there by peritoneal adhesions.

On April 22nd the vagina was punctured with Boinet's trocar. About three litres of a fluid resembling in colour café au lait were removed. Tincture of iodine diluted with half its quantity of water was then injected into the sac. In the evening the pulse was 112, the axillary temperature 37°·8 C., the skin cold, the patient was in a state of stupor and complained of headache and iodic dysphagia. The abdomen was supple and less tender. The operation had been followed by four serous stools.

On the following day the abdomen became swollen and very painful; the patient was restless at night; she had no appetite, her countenance had changed considerably, and her skin was hot and dry. In consequence of these unfavourable general symptoms, Dr. Tillaux recommended his patient to leave the hospital; this she did on May 2nd.

On May 20th she was readmitted. The general health was much improved; the tumour had been partly reproduced, and the patient again complained of severe pain in the hypogastric region.

On May 23rd a second puncture was made by the vagina, and half a litre of fetid pus removed. A tube was left in the sac through which solutions of carbolic acid were frequently injected. This treatment was continued until June 20th, when the sound was withdrawn. The patient was then able to get up, and although not completely cured, was able to leave the hospital.

Dr. Tillaux has frequently seen this patient since her discharge, and has been able to confirm her cure as complete.

Art. 181.—*Removal of a large Uterine Fibrous Polypus.*

By J. Matthews Duncan, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo. Pp. 455. Edinburgh. 1872.)

Patient, forty-four; mother of a child born 15 years ago; had felt a tumour in the abdomen for twelve years, during which time she had had a profuse thin purulent discharge; uterine hæmorrhage at times very great; appearance pale, anæmic, and sallow. The tumour was cut away in portions by a curved écraseur without much loss of blood, and its broad base enucleated, after an operation of an hour and a half. The tumour weighed 2lbs. 6½oz.; patient much exhausted; perineum considerably lacerated; made a good recovery. The main difficulty in the removal of the mass was the narrowness of the vaginal outlet, and the impossibility of drawing the tumour down through it. The plan of operation, in so far as it was possible to carry it out, was to spirally cut down the tumour, and, at the same time, avoid completely detaching the removed part, causing an elongation of the mass, as in the *turned toy-snake*. This operation—proposed by Dr. Alfred Hegar, of Darmstadt—is one of almost impossible performance with an écraseur, as proved by Dr. Duncan's case, in which the incised portions were repeatedly torn

away. Where it can be done, Dr. Duncan considers the enucleation of the pedicle much preferable to cutting it off.

Art. 182.—*On a New Proceeding for the Treatment of Vesico-Vaginal Fistula.*

By M. Lannelongue.

(*Gazette Médicale de Paris*, No. 15, 1873.)

M. Lannelongue has recently communicated to the Surgical Society of Paris a very interesting report of a case in which a vesico-vaginal fistula was treated by a new and very ingenious proceeding.

The fistula occupied almost all the anterior wall and part of the lateral walls of the vagina. The bas-fond of the bladder, and the corresponding portion of the vagina had been destroyed. The ureters opened into the vagina, the right duct against the ischio-pubic ramus, the left at the angle of the fistula. The posterior wall of the bladder protruding through the fistula, descended as far as, and even beyond, the vulva, where it formed a red tumour of the size of a pigeon's egg.

By a preliminary operation, M. Lannelongue replaced in the bladder the orifice of the ureter, which had opened into the vagina. For this purpose he introduced into the canal of the ureter a needle carrying the chain of an écraseur. After having traversed the canal for about a centimetre, the needle was pushed into the bladder. The superior wall of the ureter for this extent was then divided by the chain of the écraseur.

The new proceeding carried out by M. Lannelongue consisted in making use of the prolapsed bladder in order to make up for the enormous loss of substance presented by the walls of the vagina. He formed on the vesical mucous membrane a raw surface, presenting a transverse band about one centimetre in width, and passing from one to the other of the lateral angles of the fistula. The margins of the fistula were then pared, and maintained in contact with the raw surface of the bladder by means of eleven points of metallic suture. Eight days after this operation the wire sutures were removed; the opposed surfaces were united, and the perforation was entirely filled up. A desideratum moreover was left after the operation. The ureter, which opened at the angle of the fistula, and which was not, like the other, returned to the bladder, still remained patent in the vagina.

At the time that M. Lannelongue presented his patient to the Society of Surgery, that is to say, two months after the operation, the vesical flap occupying the perforation was thick, resistent, slightly prominent on the side of the vagina, where it formed a swelling, the colour of which was deeper than that of the rest of the vaginal wall. With regard to the diminution of the vesical capacity, which was necessarily produced by removing from the bladder a part of the wall, limiting its surface, M. Lannelongue observed that it was not very considerable, and would probably present no inconvenience; indeed, a small sound introduced into the bladder could be moved freely and easily in the new cavity.

There is one circumstance, however, which seems to inspire more fear for the complete re-establishment of the functions in this patient; this is the absence of the neck of the bladder, all the bas-fond of this organ being included in the fistula. M. Lannelongue hopes, by means of electrization, to afford to the muscular fibres which, according to M. Sappey, continue in some fashion the neck of the bladder over a certain extent of urethra, an exceptional development which will be sufficient to arrest the involuntary flow of urine.

Art. 183.—*On Diagnostic Puncture in Cases of Abdominal Collections of Fluid.*

By Professor Otto Spiegelberg.

(*Archiv für Gynakologie*, No. 2, 1872 ; *Schmidt's Jahrbücher*, No. 10, 1872.)

As a contrast to a previously reported case in which, through omission of an exploratory puncture, hydatid disease of the kidneys was confounded with an ovarian cystic disease, the author relates another in which pus was removed by puncture of a cyst of doubtful origin situated in the umbilical and hypogastric regions. Strong reaction was the result of this proceeding, but this soon ceased. The sac again filled to a considerable extent, and then it was decided to make an exploratory incision. The sac appeared at first to be that of an ovarian tumour, but on puncturing it a considerable quantity of purulent fluid was discharged, and then the ovary could be felt, and was found quite free. The cyst had had a retro-peritoneal origin; on opening it further, an hydatid membrane suddenly protruded. The cyst was partially excised, and the remainder of it fixed to the abdominal wound. A cure resulted after prolonged suppuration (eleven weeks) and destruction of the sac.

This case shows that a puncture even of a cyst with specific contents may give rise to deception. How valuable this plan may be though, through its positive results, is proved by another case reported by the author in which a large retro-peritoneal and mesenteric sarcoma, extending into the pelvis, simulated an ovarian cyst through numerous sacculated ascitic cavities and secondary pedunculated connexion with the fundus of the womb. A puncture was followed by the discharge of a small quantity of dark-coloured fluid containing several red and white blood corpuscles. That this fluid was serous in character was proved by its spontaneous coagulation and the absence of epithelial elements. The author refrained from operating, and death resulted from marasmus and pulmonary œdema.

In another case, in which the tumour was not to be reached from the pelvis, and in which there were several diagnostic difficulties, the author decided upon operating, since through exploratory puncture a fluid had been removed which contained vesicles, cholesterine crystals, numerous round cells, cells with clear swollen and vesicular contents, and numerous nucleated, cylindrical, epithelial cells which were clearly defined. The epithelial character of the tumour (ovarian) was thus established. The operation of ovariotomy, however, was not completed

in consequence of extensive adhesions between the ovarian cysts and the abdominal parietes, and death finally resulted through suppuration of the cyst.

The author concludes that exploratory puncture, although it does not always afford positive disclosures concerning the origin of abdominal collections of fluid, must, when it does do so, be regarded as a sure means in comparison with the doubtful results of physical and other methods of investigation.

Art. 184.—*Report of a Successful Case of Gastrotomy in Extra-Uterine Gestation.*

By Lawson Tait, F.R.C.S.

(*Medical Times and Gazette,* February 22.)

At a meeting of the Royal Medical and Chirurgical Society, February 11th, Mr. Tait related a successful case of gastrotomy in extra-uterine gestation. In the case of J. N., aged twenty-seven, retro-uterine pregnancy was diagnosed on Sept. 23rd, the child having arrived at the term and died about the end of the July previous. The operation was performed on Nov. 2nd, the section being much as in ovariotomy. After opening the sac the feet presented, and no difficulty was experienced in removing the child, except in extracting the head from the pelvis, in which it was deeply packed, and where it had contracted adhesions to the floor of its cavity. The edge of the wound in the sac was stitched to the edge of the peritoneal wound by a continuous suture, the peritoneal cavity being thus completely closed. The upper half of the parietal wound (its entire length being about seven inches) was closed by deep sutures. A syphon drainage-tube was inserted deeply into the pelvic cavity, and the whole was syringed out every eight hours with a solution of sulphite of soda. A fetid discharge issued from the cavity till about the eighth day after the operation, when it became purulent and was mixed occasionally with placental débris. Pieces of detached placenta were removed occasionally, together with fœtal hair which had become adherent to the internal surface of the cyst, and been detached from the scalp in removing the child, until Nov. 29th, when the great mass of the placenta was removed. After this the cavity rapidly closed, the part in the pelvis being quite obliterated early in December, and the whole shut up by the end of the month, leaving only a small sinus. The patient had a severe struggle with hectic. The chief peculiarities of the case are—the absence of any "false labour" previous to the death of the child; the leaving the placenta undisturbed; and the peculiar method of closing the peritoneal cavity, and leaving the parietal wound partly open. To leave a communication between the cyst and the peritoneum is to run the gauntlet of pyæmia and peritonitis. Closing the parietal wound entirely must lead to similar results. The operation, performed as in this case, would seem to have no greater risks than ovariotomy, and it is certainly preferable to leaving the cases to take their chance of discharging the misplaced fœtus by suppuration. If

possible, the operation ought to be done near the term, and before the death of the child. If the latter condition cannot be obtained, the operation ought to be undertaken as soon after the death of the child as possible, to avoid the serious complications of adhesion between the fœtus and the cyst.

Art. 185.—*Removal of a Needle from the Heart; Recovery of the Patient.**

By George W. Callender, F.R.S., F.R.C.S., Surgeon to St. Bartholomew's Hospital.

(*The Lancet*, Feb. 22.)

This is the history of a man who for nine days followed his ordinary occupation, in pain and with discomfort, having a needle fixed in the tissues at the apex of the heart. On the ninth day, in consequence of his statement and in view of the pain he was suffering, an incision was made over the fifth intercostal space, and the broken eye of the needle was found on a level with the intercostal muscle. This extremity was seized, and the foreign body was withdrawn. The patient recovered without an unfavourable symptom. With this history the exact position of the needle in the wall of the chest is given, as also is that of its probable position in the heart; the movements of the foreign body, caused by those of the heart, are figured, and their measurements are added. Some remarks are made upon recovery and duration of life after somewhat similar injuries, and an appendix of cases is given in the form of a table.

Art. 186.—*Extraordinary Case of Pin-Vomiting, &c.; Recovery.*

Under the care of Dr. G. Wright Hutchison, at Belford Hospital, Fort William, N.B.

(*The Lancet*, Jan. 18.)

Cases like the following occasionally come under the care of the medical man, and generally occasion much doubt and scepticism. There can be no doubt that the majority, if not all, are impositions. It would be interesting to know whether the patient in this case was left-handed, for it is to be remarked that the needles were discharged from those parts of the body into which they could be best introduced by the left hand—*e.g.*, behind the left ear, from the left nostril and right forearm. Further, the fact that all the pins were bent at an acute angle seems to

* Read at a Meeting of the Royal Medical and Chirurgical Society, Feb. 11th.

point to an intentional bending rather than an accidental one produced by biting the pins, for it would hardly be possible to bend a pin at an acute angle by means of the teeth only.

Catherine M., aged twenty, a nursemaid, was admitted on Aug. 30th, 1872. The patient stated that, while employed fixing clothes to a line the previous day she, having four or five large pins in her mouth, had accidentally swallowed them. She complained of a constant jagging pain in the precordial region. Having remained in hospital eleven days, during which time she vomited five pins (an emetic having been administered every second day), she was dismissed cured.

After being four days at home she again experienced the jagging pain in the precordial region, and her mistress having administered large quantities of warm water, she vomited two pins. From this time her stomach remained very irritable, and she was constantly vomiting—having great pain while retching—till on Oct. 20th she vomited no fewer than twenty-three pins. For nine days after this date a needle came out at a spot over the origin of the sterno-cleido-mastoid muscle behind the left ear—one needle each day. On Sept. 20th two needles came out of the left nostril in succession, each needle being in three pieces. Blood flowed freely from her nose and mouth.

On Oct. 26th she applied for readmission into hospital, which was granted. On the first two days of her residence in hospital a needle came out each day behind the left ear. On Nov. 2nd, at a spot on the front of her right forearm, about two inches from the elbow-joint, a needle came out, and the broken-off point of which issued at the same spot next day. On November 4th another needle, minus the point, came out at the same spot. She remained in hospital for some weeks after this date, and the irritation having left her stomach, and her general health being excellent, she was dismissed, returning to her service, and, so far as is known, having kept quite well since.

She is and always has been, a strong healthy girl, without the slightest tendency to hysteria. Seventy-five pins in all were vomited, all of which have been carefully kept. The pins are such as are sold by weight, not in paper. They are all quite clean, and bent at an acute angle. One of them is what is called a safety pin. It came up in three pieces. The needles are blackened and slightly eroded. Two of them are threaded, the threads being, in each instance, about three inches long. Before a needle made its appearance pain was felt, shifting along till the needle made its exit. Thirteen needles in all came out. Of the nine which issued behind the ear, eight came out about an hour after breakfast, whilst the ninth appeared an hour after dinner, probably from the action of the muscles of the jaw.

The girl was repeatedly cross-examined with a view to ascertaining how the pins and needles came to be swallowed. Except in the instance of the five pins swallowed while hanging up clothes to dry, she is not aware of even having swallowed pins. She had, however, been in the constant habit of putting pins in her mouth from childhood, and often fell asleep, after undressing the children at night, with half-a-dozen pins in her mouth. Her present mistress said that she had observed the habit in her nursemaid, and that one morning she had found the girl asleep with half-a-dozen pins between her cheeks and her teeth. The

fact of all the pins being bent is a curious one. Probably she would chew them, as it were. She has a beautiful set of teeth.

The history of the case is almost incredible, but, from what was observed in hospital, and from the evidence of her mistress, which is thoroughly reliable, there can be no doubt about its being bonâ fide.

Art. 187.—*Two Cases of Cancer.*

By T. W. Nunn, F.R.C.S., Surgeon to the Middlesex Hospital.

(*Medical Times and Gazette*, Dec. 14, 1872.)

At a meeting of the Clinical Society of London, Nov. 22nd, Mr. Nunn read a paper "On Two Cases of Cancer of the Left Breast"—the first of eight years', the second of twelve months' duration. The first case was that of Ann F., spinster, aged forty-four. The patient came under Mr. Nunn's care as out-patient in 1868, two years after removal of a cancer from the left breast by Mr. Henry Smith at King's College Hospital. In 1870 she was admitted in-patient at the Middlesex Hospital. Soon after her admission the recurrent cancer sloughed out, and the sore healed, and remained healed until her death, in August, 1872, from cancer of the liver; the lungs, spleen, and kidneys being normal, while secondary deposit was found on the inner and outer aspects of the ribs of the right side and also in the manubrium sterni. The second case was that of Mrs. R., who was brought to Mr. Nunn, by Dr. Saunders, of South Molton Street. The patient was the mother of five children, and was only twenty-seven years of age. At the sixth month of her last pregnancy she had discovered a small lump in the left breast. Two months after her confinement she came under Mr. Nunn's observation. The tumour was at that time undefined. After two months the patient suffered from ptosis of the left eye, and ultimately with paralysis of the third nerve generally. She became extremely fat; and she died paralysed in the lower extremities, frequently having suffered from severe neuralgic pains in the upper cervical and dorsal regions. Towards the end of her life the temperature in the axilla was 104°, the cancer of the breast having become of stony hardness. Mr. Nunn remarked upon the uncertainty of surgical practice in respect of cancer, which, he said, must remain uncertain so long as our knowledge of the disease was incomplete. The variety of forms in which cancer presented itself was in some measure due to the modification of the disease by the peculiarity of the structure in which it was found, and by the situation and surroundings of the selected structure. In the first case the cancer occurred in an unmarried, under-sized woman, whose frame was undergoing involution; in the second case the disease appeared in a woman in full reproductive activity. Assuming cancer to be a local disease, we were still unable to say what rendered the cancer germs stationary, living their life and undergoing retrograde changes without travelling to distant parts and there proliferating; and we were unable to tell what constituted the difference between cancer germs content with a local career, and those of a propagandist order, or what conditions provided each of the opposite degrees of activity. Was

non-contamination due to resistance of the parts or tissues exposed to contamination, or to some local change in the cancer destroying its power of contaminating? What share had inflammatory action, by softening the tissues and stimulating proliferation, in promoting diffusion? Assuming, on the other hand, that cancer was a blood disease, how could one justify the removal of a cancer by operation? A clinical study of cancer showed that, if the surgeon did not step in with knife or with caustic, the disease itself, by inducing gangrene or ulceration, produced a wound that very rarely healed; and that, therefore, the surgeon did in a clean and effectual manner, *pro tempore*, what sooner or later the disease would more painfully and ineffectually attempt. Mr. Nunn asserted that he had seen no instance in which diffusion of cancer was really accelerated by operation.

Art. 188.—*On the Curability of Inguinal Hernia.*

By John Wood, F.R.C.S., F.R.S.

(*Medical Times and Gazette*, Feb. 15, 1873.)

At a meeting of the West Kent Medico-Chirurgical Society, Jan. 3rd, Professor Wood described his operation, which is as follows:—It is intended to draw forward the hinder and inner walls of the hernial canal by transfixing the conjoined tendon and uniting it to the front and outer wall by suture, so as to close the hernial canal entirely. He invaginates the hernial sac, without including the skin, and by the arrangement of the sutures draws up its fundus into the deep hernial opening on each side. The pillars of the superficial ring are bound together, no skin being suffered to intervene. The conjoined tendon and Poupart's ligament are caused to adhere across the cord, and are blended in one mass of adhesion with the invaginated sac and pillars of the superficial ring. The instruments used by Professor Wood are very simple, consisting of a small tenotomy knife and a stout semicircular needle mounted in a strong handle, with a point flattened antero-posteriorly, and adapted rather for splitting than cutting the tissues. The needle is introduced each time unarmed. While the tissues are transfixed by it, a piece of stout copper wire, silvered, about two feet long, is hooked on the needle's eye, and drawn back with it through the tissues. The patient being laid on his back, with shoulders well raised and knees bent, the pubes clean shaved, the rupture completely reduced, and chloroform given, an oblique incision about an inch long is made in the skin of the scrotum, over the fundus of the hernial sac. The knife is then carried flatwise under the margins of the incision, so as to separate the skin from the deeper layers of the sac to the extent of about an inch or rather more all round. The forefinger is then passed into the wound, and the detached fascia and fundus of the sac invaginated into the canal. The finger then feels for the lower border of the internal oblique muscle, lifting it forward to the surface. By this means the outer edge of the conjoined tendon is felt to the inner side of the finger. The needle is then carried carefully up to the point

of the finger, along its inner side, and made to transfix the conjoined tendon and also the inner pillar of the superficial ring. When the point is seen to raise the skin, the latter is drawn over towards the median line, and the needle made to pierce it as far outward as possible. A small hook, bent on the end of the wire, is now attached to the eye of the needle, drawn back with it to the scrotum, and then detached. The finger is next placed behind the outer pillar of the ring, and made to raise that and Poupart's ligament as much as possible from the deeper structures. The needle is then passed along the outer side of the finger, and pushed through Poupart's ligament a little below the deep hernial opening. The point is then directed through the same skin puncture before made, the other end of the wire hooked on to it, and drawn back into the scrotal puncture as before, and then detached. Next, the sac at the scrotal incision is pinched up between finger and thumb, and the cord slipped back from it as in taking up varicose veins. The needle is then passed across the sac, entering and emerging at the opposite end of the scrotal incision. The end of the wire is again hooked on and drawn back across the sac. Both ends of the wire are then drawn down until the loop is near the surface of the groin above, and are twisted together down into the incision, and cut off to a convenient length. Traction is then made on the loop; this invaginates the sac and scrotal fascia well up into the hernial canal. The loop of wire is finally twisted down close into the upper puncture, and bent down to be joined to the two ends in a bow or arch, under which is placed a stout pad of lint; the whole is held steady by a spica bandage. The wire is kept in ten days or a fortnight, or even longer if consolidation and adhesion are not satisfactory. Very little suppuration usually follows, but after a few days the parts traversed by the wire can be felt thickened and hardened by extensive deposit, which blends together the sac, the pillars of the superficial ring, and the tendinous boundaries of the hernial canal into a resisting mass, the wire becoming more and more loosened by ulceration in its track, until it can be untwisted and withdrawn. In this operation the hernial canal is closed along its whole length, and an extended adherent surface is obtained to resist future protrusion. A horseshoe truss is worn for a few months; it may then be laid aside, unless in occasional cases or when the patient is about to be subjected to violent strains or lifting. For large cases of direct hernia Professor Wood crosses the wires in the canal, and obtains an additional hold on the pillars of the ring below. The ring-pad truss is also employed in these cases after the operation. The number of cases Mr. Wood has operated on is close on 200; percentage of cures, as far as can be ascertained, 50 per cent. in cases above fourteen, and 70 to 75 per cent. in cases under puberty; three deaths, or $1\frac{1}{2}$ per cent. In one case death was owing to peritonitis commencing in a loop of intestine on the opposite side, which had been strangulated in the sac previous to operation. In another case death resulted from pyæmia three weeks after the operation. Most of those not entirely cured have been much improved, and a truss made more available; none have been made worse.

Art. 189.—*On the Radical Cure of Hernia.*

By Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital.

(*The Practice of Surgery; a Manual.* London. 1872.)

Mr. Bryant believes that where a hernia can be kept up by a truss, and the patient is likely to remain in a civilized country where trusses can be obtained, any operation for the radical cure is unjustifiable; to risk the life of the patient on the theory of a cure, with the probability that he will be rendered less liable to its descent, when a truss has to be worn subsequent to the operation as a matter of safety, is, he says, a practical delusion.

Art. 190.—*Treatment of Strangulated Hernia.*

By Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital.

(*The Practice of Surgery; a Manual.* London. 1872.)

Mr. Bryant recommends "the taxis," and when this fails, herniotomy. To aid these means chloroform should be employed; it renders the reduction of a hernia by the taxis, a gentle, and comparatively a simple measure; and it facilitates the operation of herniotomy. The warm bath, the administration of opium, the injection of tobacco, the local application of ice, are, in Mr. Bryant's opinion, poor and unreliable remedies for strangulated hernia.

Art. 191.—*On Hydrocele.*

By Dr. E. Vetault.

(*Considérations Etiologiques sur l'Hydrocèle des Adultes.* Paris. 1873.)

The following are the conclusions given by the author of this work:—

1. Hydrocele is hydropsy of the tunica vaginalis. Like other hydropsies, it is not essential.

2. It is, in the majority of cases, symptomatic of chronic lesions of the spermatic gland.

3. These lesions are sometimes seated in the body of the testicle, but at the same time affect the epididymis. Very often the lesion is seated only in the epididymis, and is then localized to the tail of this structure.

4. This chronic epididymitis may follow an acute attack of inflammation, but most frequently is chronic from the commencement.

5. It is habitually produced by a centre of irritation near the prostatic region of the urethra.

6. The injuries to which has been attributed the chief part in the etiology of hydrocele are but accessory causes: they act not on the serous membrane, but on the epididymis.

Art. 192.—*Puncture of the Bladder above the Pubes.*

By James I. Little, M.D.

(*New York Medical Journal*, Nov. 1872.)

Dr. Little records a case of retention of urine from enlarged prostate in which he punctured the bladder fourteen times with a capillary aspirator. Subsequently a catheter could be introduced by the urethra. "No tenderness followed the punctures, and in a few days all traces of them had disappeared. The patient at last accounts was passing the greater portion of his urine without the catheter. No cystitis had taken place. During the time the aspirator was being used, he was free from all constitutional disturbance."

Dr. Little suggests the following rules for this operation :—

"1. The patient should lie on his back, and, if the bladder is not much distended, the operation will be facilitated by slightly elevating the patient's hips by means of a pillow placed beneath them.

"2. The puncture should be made on or near the median line, from one inch to one inch and a half above the pubes, and should be made each time in a different place. In the case described, the punctures were about a line apart and extended over an area about half an inch in diameter. Mr. Watelet recommends the No. 2 capillary trocar, but in cases where cystitis exists and the urine is loaded with pus, mucus, or the phosphates, one of the larger trocars may be used with safety.

"3. The bladder may, when necessary, be washed out by filling the cylinder with water from the basin, and reversing the action of the instrument, without withdrawing the trocar from the bladder."

Another case of retention of urine from enlarged prostate is recorded (*Med. Record*, June 1, 1872) by Dr. H. K. Clark, of Geneva, in which six or seven punctures were made above the pubes with a trocar and canula *one twelfth* of an inch in *diameter*. Each puncture was made without regard to the point of previous punctures, and the canula withdrawn as soon as the bladder was emptied. No unpleasant effect followed these operations.

Art. 193.—*A Case of Penetrating Wound of the Bladder.**

By M. Perrin.

(*Gazette Médicale de Paris*, No. 49, 1872.)

A man, aged forty years, whilst endeavouring to put up some curtains fell and struck the overturned chair upon which he had been standing. The force with which he fell was so great that there was an actual empalement, one of the legs of the chair, which was broken off, penetrating the anus. The extraction of this large foreign body was immediately followed by a gush of urine.

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* Communicated to the Société de Chirurgie, Paris.

For several days there was incontinence of urine and fæcal matter. After the tenth day the patient passed urine by the urethra. Towards the twenty-fifth day there was complete cicatrization of the wounded parts. Fifteen days later the patient had an attack of retention of urine, which lasted for five days, and was then completely relieved after the expulsion of a small piece of cloth, which had been torn from the trousers at the time of the accident.

Art. 194.—*Removal of a Gum Catheter from the Bladder.*

By William Stokes, F.R.C.S.I.

(*Irish Hospital Gazette*, January.)

The author records a case in which he successfully performed Allarton's median operation for the removal of an entire gum catheter from the bladder. The chief points of interest of the case are the extreme difficulties that had to be overcome, owing to the narrowing of the urethra in two situations, the numerous false passages, and the great induration, thickening, and matting of the soft tissues in the perineum, and finally, showing that the vermicular action in the urethra is contrary to the commonly received opinion, towards, and not from, the bladder.

The question as to the vermicular action of the urethra was the subject of discussion at the meeting of the Surgical Society of Ireland, Jan. 3rd, 1873, and very contradictory opinions expressed. Prof. Macnamara stated that formerly he was of opinion that the vermicular action of the urethra was outwards and not inwards, but from the theory of cases of stricture he was led to entertain an opposite view. "Many years since his attention was drawn to the fact that if a catheter was fastened in the urethra, the tendency was to make its way towards the bladder and not to fall out. . . . . He determined to make a practical application of the subject, and many years ago it became his practice when dealing with what he might call mixed strictures—partly organic and partly spasmodic—to pass a catgut bougie as far as he could towards the bladder, and fasten it there, and on coming back two hours afterwards he would be rather surprised if it had not travelled towards the bladder. He communicated these observations to his friends in the profession many years ago. One remarkable case occurred during the period when Mr. Stokes was his colleague in the Meath Hospital. Mr. Stokes had a case of rather difficult stricture to deal with. He advised him to introduce a catgut bougie and lodge it in the stricture, and assured him his experience was that in a couple of hours he would find that the catgut had travelled towards the bladder. Mr. Stokes replied that the teaching of the school was opposed to this. However, he followed out his suggestion, introduced the catgut bougie into the stricture, and in two or three hours afterwards he was much gratified to find it was lodged in the bladder. He (Prof. Macnamara) believed that the fact—that an instrument had a tendency to work inwards towards the bladder—could only be explained on the principle of vermicular action. No doubt the vermicular action was feeble, and in the

60th or 80th part of a square inch of the urethra its force would be almost infinitesimal; but when an instrument was introduced for some five or six inches the vermicular action was exercised over the whole of this length, and was sufficient to work the instrument on by degrees until it entered the bladder. . . . . He believed that this physiological fact was of great practical importance in the treatment of strictures. He was now in the habit whenever he met an old stricture, which some persons call 'impassable stricture,' of treating it with the catgut bougie, and this mode of treatment had been repeatedly followed by the most satisfactory results. Having lodged the catgut bougie in the stricture he left it there, and his experience was, on going back in two or three hours, even in spite of the catgut swelling, it had advanced towards the goal he wanted it to reach. The swelling did not occur in the case of the small gum-elastic catheter, which he also used. That instrument would gradually work down in the same manner; it had less resistance to encounter in the shape of swelling, but it afforded just the same surface for the vermicular action, and it would much more frequently reach the bladder than the catgut." Dr. Macnamara supposed this observation was original, but he had recently learned that Dr. Flemming had anticipated him, and placed similar facts on record in the *Dublin Hospital Gazette*, in 1858.

Prof. Morgan, Dr. Stapleton, Mr. Wharton, Mr. Richardson, and Dr. McDowell expressed their disbelief in the suction power of the bladder and the vermicular action of the urethra.

Art 195.—*On Lithotrity and Lithotomy.*

By F. H. Hamilton, Professor of the Practice of Surgery, Bellevue Hospital Medical College.

(*Principles and Practice of Surgery*, pp. 943. New York. 1872.)

Respecting lithotrity and lithotomy, it is stated in general :—

1. That lithotrity is most easy of execution and most successful in women; 2, in adult males, especially in those of middle life, whose urethræ and bladders are in a tolerably healthy condition; 3, in cases where the stone is small, phosphatic, or brittle; or, if we speak with reference to age alone, it may be said that lithotripsy is to be reserved especially for those examples of stone in which the age of the patient is over fifteen or seventeen years. While, on the other hand, lithotripsy is peculiarly difficult, and sometimes wholly inapplicable: 1, when the urethra is strictured or exquisitely irritable; 2, when the bladder is very irritable, inflamed, ulcerated, contracted, hypertrophied, or sacculated, or when it is in a condition of extreme atony; 3, when the prostate is much enlarged, as so often is found to be the case in old age; 4, when a pretty large stone is associated with a narrow but healthy urethra, a condition which sometimes obtains in childhood and infancy; 5, when the stone is of very great size, or very hard, or encysted; 6, when there are a large number of calculi; 7, when the kidneys are suffering from serious organic disease, or the general health is greatly impaired.

Art. 196.—*Observations on Lithotrity and Lithotomy.*

By William H. Hingston, M.D., Surgeon to the Hôtel Dieu, Montreal.

(*Canada Medical Record*, December, 1872.)

Dr. Hingston is of opinion that, in the adult:
1st. When the stone is small, we should crush.
2nd. When however large, if friable, crush.
3rd. When single, crush.
4th. When multiple, crush.
5th. When hard and large, whether single or multiple, we should cut.
6th. But that in all cases of children, whatever may be the size, or number, or consistence of the calculi, we should lithotomize.

Art. 197.—*On Renal Disease in Calculous Patients, and its Influence on the Choice of Operation.**

By Sir Henry Thompson, M.B., Surgeon-Extraordinary to His Majesty the King of the Belgians; Surgeon to University College Hospital, &c.

(*British Medical Journal*, March 8.)

The patient, a naval pensioner, aged sixty, thin and careworn, had suffered from symptoms of stone for more than three years. In the course of 1872 he had been admitted into a metropolitan hospital, when the stone was crushed several times. After this, the patient continued pretty comfortable for about three months; he then rapidly relapsed, and, when he came under Sir Henry Thompson's care, the old man was in a most miserable condition. He could not hold his urine more than half an hour, even at night, and, as he could only pass it when in the erect position, he was obliged to leave his bed every time, and was greatly reduced by pain and want of sleep. This urine was alkaline, of low sp. gr., contained a large amount of albumen, and an unmistakable granular cast was found under the microscope at the first examination. On sounding him, fragments of phosphatic stone were detected. It was evident that the patient had advanced disease of the kidneys, and that his ultimate fate was settled; still his principal sufferings were due to the presence of the calculous matter in the bladder, and these could be removed or greatly relieved by lithotrity.

He was accordingly admitted into the hospital on January 21st; the 24th, Sir Henry removed some débris, and repeated the process on the 28th without any unfavourable symptoms: on the contrary, the patient during this time improved in strength, could move about better, and was able to hold his urine for an hour or more at a time. All but a few fragments had in fact been removed when, on February 1st—a

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* Abstract of a Clinical Lecture, delivered at University College Hospital, February 28th, 1873.

cold day—the patient slipped out of the ward and stood for some time in the yard of the hospital smoking. Next day he had a severe rigor, followed by headache, drowsiness, partial suppression of urine, &c., and, although at first he rallied somewhat under treatment, he never recovered the effects of his unfortuate indiscretion, and died on February 19th of uræmia.

Post-mortem Examination.—The external surface of the kidneys was granular; the capsules were opaque and adherent: on section, the cortical layer was thin, mottled with patches of yellow degeneration, and studded here and there with small abscesses; the pyramids were congested. The pelves of the kidneys and the ureters were dilated, and contained puriform matter. The muscular coat of the bladder was hypertrophied; the mucous membrane was much congested, dark, thickened, opaque, and ulcerated in places; the so-called "middle lobe" of the prostate was much enlarged, forming a regular bar across the neck of the bladder; in the deep hollow behind this were a few small and soft fragments of stone, weighing in all twelve grains.

In commenting on this case, Sir Henry Thompson said:—"The question we have to consider to-day, gentlemen, is this—If stone in the bladder be complicated by the presence of chronic renal disease, what should be done? When are we justified in operating? and which operation should we choose? 'Chronic renal disease' is a wide term; and, in order to answer the question better, I will consider the chief forms of kidney disease separately.

"We may at once dispose of malignant disease: if this be so advanced that a satisfactory diagnosis is possible, any operation is clearly useless. Chronic Bright's disease, again, is a loose term, and includes several varieties; the two that chiefly concern us now are the large white smooth kidney, and the granular contracted kidney; the so-called amyloid disease is rare. There is no difficulty in the diagnosis of Bright's disease, even when complicated by the presence of stone; the low specific gravity of the urine, the presence of casts and of an amount of albumen out of proportion to the amount of pus present decide the nature of the case at once. Next, there is what may be called the calculous kidney. You will often meet with men who are frequently, or almost continuously, passing crystals of uric acid or small calculi. This never goes on for any length of time without damage to the kidney; on microscopic examination, you will always find blood in the urine. They are often stout, red-faced, healthy-looking rustics; but if such a man come to you with a stone in his bladder and tells you that he has been accustomed to pass gravel for years, beware of him; in spite of his apparent good health, he will be unusually liable to severe rigors and urinary fever.

"Next, saccharine diabetes is occasionally associated with stone. I have met with two such cases, and never had any more troublesome: there was in both very great irritability of the bladder and of the system generally; and if you should meet with the same complication, the case will probably require all the care and patience you can muster.

"Lastly, there is that dilated condition of the kidney and the ureters which is due to long standing obstruction in the passages. This has

been sometimes called 'surgical kidney,' a most inappropriate and unphilosophical term, and one which I never use. So far from being really a 'surgical' kidney, it is one which denotes the want of surgical treatment; one which never would have existed had surgical aid been afforded at the outset of the malady. This condition is most frequently met with in cases of old stricture, also in cases of enlarged prostate, large calculus, long continued atony of the bladder, &c. Owing, then, to the presence of some obstruction to the escape of urine from the bladder, that organ becomes dilated and hypertrophied, the pressure tells backwards on the ureters, these and the pelves of the kidneys become dilated, the secreting substance itself is compressed against the capsule, and, finally, the whole organ may be distended into a sort of cyst. I have seen the ureters as large as the small intestine, and contain, with the pelves of the kidneys, thirty fluid ounces of water. A calculus by itself never produces this effect unless it be large, and not necessarily even then; it depends on the amount of obstruction. And now comes an important fact, viz., that all this may occur without any distinct symptoms; you may suspect that this state of things is present, but you cannot make absolutely sure. The patient probably has some cystitis, and consequently pus in his urine, but there is no more albumen present than the pus would account for; there are no casts; the urine may be of fair specific gravity, and there will even be no deficiency of urea; if there be, the patient will at once show symptoms. The fact is, that we are liberally provided with secreting and excreting organs. A man may live very comfortably, even though a considerable proportion of both lungs be blocked up with tubercle; two half lungs are sufficient under ordinary circumstances; but if he get a little bronchitis—an amount which a healthy man would scarcely feel—it carries him off; he has just enough breathing space to sustain life, but no margin to spare. Just so a man may live with two half kidneys; he gets along quite well under ordinary circumstances; there is just enough of the organs left to meet the wants of the system, but any small derangement upsets the balance, and serious symptoms appear at once.

"A high authority abroad has stated that this state of the kidneys can be diagnosed by means of palpation, but I cannot confirm his assertion. It would be exceedingly difficult to detect with certainty a soft, moveable, and collapsible tube like the ureter even in a thin person; but generally these patients are past middle life, and stout also from confinement; the parts are not sensitive, unless suppuration or a renal calculus be present. You may often be able to make a shrewd guess; but even a strong suspicion is not a sufficient ground for refusing to relieve a suffering patient.

"In the next place, to what extent does the presence of renal disease affect the prognosis of lithotrity? Omitting slight cases, I have operated on three patients who were suffering from *advanced* chronic Bright's disease. The first was some years ago. A very pale, weak, and puffy-looking man, with a large phosphatic stone, came to me to be operated on, but I refused; he, however, begged so hard that I would do something for him, and was in so much pain and distress, that at last I took him in. Even then I kept him three weeks under observa-

tion before I did anything, which is not my usual custom. I then crushed the stone very carefully in eight sittings, allowing a good interval between them. The man was in the hospital three months—three times as long as most of my patients—but he went out freed from his trouble, and died of the kidney-disease nine months afterwards without any recurrence of the calculus.

"Some time afterwards, I operated on a second and similar case. He had some rigors, but went out at the end of ten weeks cured of his stone; he came to show himself three months afterwards, when he had still a large amount of albumen in his urine, but no recurrence of the stone. Emboldened, perhaps, by success, I attempted a third and worse case shortly afterwards. This patient went on well for a time, but after the fifth sitting uræmic symptoms supervened and he died.

"I cannot tell how many cases of mechanical dilatation of the kidney I may have operated on with success; for, as I said, I know no means of ascertaining with certainty during life the existence of the disease; but I have little doubt that there has been more or less distension of the ureters, &c., in a considerable number of the more severe cases. I may instance particularly three cases of stone complicated by very tight and old standing stricture. My plan under such circumstances is to tie in catheters for a week, or until I can introduce a small lithotrite; after each crushing I replace the catheters, and continue them until the stone is removed. I have not the smallest doubt, judging from the history and state of these patients, that all had some, perhaps a considerable amount of disease; yet in each case the result was successful.

"Surgeons have said that, if a patient with stone in the bladder have also chronic disease of the kidneys, the best plan is to cut him; to have one operation and have done with it, and not to go on teasing the man with instruments for several weeks. I can only say that lithotomy would certainly have killed any one of the three pale, feeble, bloodless patients I first mentioned; indeed, no one of the six could have been cut—no surgeon would have thought of it. It is just fifty years since lithotrity was first introduced, and up to thirty years ago, or less, this dictum was true, but it is not so now. The statistics of lithotomy were never better than they were fifty years ago; indeed they are now scarcely as good, for since then many of the most favourable cases have been treated by crushing. The statistics of the lithotrity, on the other hand, have improved, and are improving every year. Lithotomy, then, has stood still; lithotrity has been greatly improved, and the axiom is consequently now reversed. There is no doubt with our present experience that, if only the stone is sufficiently friable, lithotrity, *if skilfully performed*, is the best operation in such cases: the shock, loss of blood, &c., of lithotomy make considerable demands on the strength of the patient. The lithotrity must, I repeat, be very carefully done; of the two operations, that of crushing is certainly the one in which previous practice on the part of the operator makes the greater difference in the chance of curing the patient. Therefore, I say to you, inasmuch as you may be well able to do a good bold operation of lithotomy at the outset of your career if you have surgical talent at all, do so with any doubtful case, or if the stone be at all large, until you have had a little experience with two or three cases of small

stones by lithotrity. Whatever you do by that means, let your early attempts be always made on small calculi only.

In conclusion, I may repeat the advice which I am constantly giving you. Always find the stone, if possible when small; the symptoms produced by stone, say of the size of a nut, are clear enough. There is no question, then, about the advisability of cutting or crushing, or about the presence or absence of kidney-disease; crush the stone at once, and the cure of the patient is almost certain.

Art. 198.—*Tubercular Disease of the Left Testis and Left Vesicula Seminalis and Vas Deferens.*

Under the care of Mr. Rivington, at the London Hospital.

(*The Lancet*, December 4.)

In his work on the Testis (p. 320), Mr. Curling states that M. Gosselin has often detected by digital examination in the rectum an affection of the vesiculæ seminales and prostate in cases of tubercular disease of the testicle. That M. Gosselin's assertion is correct there can be little doubt, and the following case shows that disease of the vesiculæ may be readily detected by rectal examination. In many cases occurring in English practice it has not been found because it has not been looked for.

Charles C——, aged twenty, was admitted into the London Hospital on the 13th February, 1872, with tubercular disease of the left testis. The disease began two years previously with smarting pain in the urethra. Six months before admission he noticed a discharge of yellowish slime (gonorrhœa?), which lasted about a month. At times the urethra was hot and inflamed. Eighteen months ago his testicle swelled, and a sinus formed, which discharged matter and then healed, leaving a small scar. Three or four hard lumps were perceptible along the epididymis, but there were no enlarged glands in the groin. On examining the patient per rectum, Mr. Rivington noticed a hardness in the prostate on the left side, and proceeding backwards from the prostate on the left side, a hard cord-like body similar to a thickened vas deferens, and a more lobulated body outside this, such as would be produced by enlargement of the vesicula seminalis. On the right side the vesicula seminalis could just be discriminated, the contrast between the two sides being very marked. Mr. Curling examined the patient a month afterwards, and corroborated the opinion formed, the vesicula seminalis and vas deferens were affected and thickened, probably from the presence of tubercle. There was no pain in the testicle, nor had it increased in size lately. The cord on the same side was natural as far as the inguinal canal.

It may be noted that the patient had had hip-joint disease on the left side eight years ago. The left hip-joint was anchylosed, and an old scar of a healed sinus remained six inches below the trochanter major. The left leg was shortened two inches, one inch being due to the femur, and one inch to the defective growth of the tibia and fibula.

The patient was ordered cod-liver oil and steel, with injections of a mildly astringent character to check the urethral discharge. It was considered inadvisable to excise the organ.

Art. 199.—*The Application of Nitrate of Silver as a Cause of Stricture of the Urethra.*

By Charles Owen Aspray, F.R.C.S., Senior Surgeon to St. George's and St. James's Dispensary, &c.

(*Medical Press and Circular*, December 18, 1872.)

In every case of stricture which comes under the author's notice, he is in the habit of trying to come to a definite conclusion as to the cause of the complaint. He believes that the treament of urethritis by injection is the best method in the majority of cases, and that it will never produce stricture if the solution employed be weak enough at first, and the patient be properly instructed as to the mode of using. It appears to him a rather significant fact, that the nitrate of silver has always been the medicament used, either in a solid form, or in solution, in those rare cases where he could venture to put down a particular local application as the cause of the complaint. This is not so much to be wondered at, if we consider that the effect of a nitrate of silver injection upon the healthy subject is to produce ardor urinæ, and a thick yellow discharge—*i.e.*, acute urethritis. The first case in which Mr. Aspray discovered this cause was that of a gentleman, who had been unnecessarily cauterized for emissions nearly twenty years previously; the stricture would not at first admit a No. 1 bougie; he had never had gonorrhœa. The other cases are not quite so clearly traced, because the individuals had suffered from gonorrhœa; in one, the patient had used a strong solution of salt on his own account, which produced retention immediately, and after this was relieved, he had symptoms of stricture, which he had never noticed before. Mr. Aspray never uses this salt in the treatment of urethral complaints, for he thinks it is one we can very well do without. He does not know any treatment of gonorrhœa more likely to produce stricture than what is called the abortive, and added to this, it rarely cures the disease.

Art. 200.—*On Circumcision for the Treatment of Syphilitic Affections of the Prepuce and Glans Penis.*

By Professor Von Sigmund.

(*Wiener Medizinische Wochenschrift*, 21, 22, 1871; *Schmidt's Jahrbücher*, No. 11, 1872.)

Partial or complete removal of the prepuce in syphilitic affections of the prepuce and glans penis ought, according to the author, to be much more frequently performed than it is at the present day. Papules and larger infiltrations, when situated on the foreskin often hinder cicatrization for years, and not unfrequently induce contraction of the prepuce and its serious consequences. Cleanliness cannot be properly attended to, and fresh infection may readily occur.

The treatment of most affections of the glans penis and prepuce generally fails in consequence of the well-known difficulties in keeping the parts clean, and in retaining dressings. As the patient most frequently is obliged to follow his occupations, complications of different kinds are added as causes of failure, and self-infection may readily take place. In addition, when there is phymosis the medical attendant will have some difficulty in making a diagnosis, in consequence of the impossibility of an ocular inspection. For patients who, on account of this disease, desire admission into an hospital, a long sojourn during the treatment of tardily cicatrizing affections is not to be approved. The nutritive functions of many patients are disturbed by hospital influences, and not a few run the risk of contracting other diseases.

In contraction of the prepuce with difficulty in diagnosing its cause, the operation is never attended with harm; after incision of the foreskin, the cause of the contraction may be recognised, and the further steps of the operation may then be taken into consideration, the precise method of operation depending upon the condition that is found. If the whole or a greater part of the prepuce be occupied by indurations, erosions, papules, and ulcers, the removal of the whole structure is indicated, as also when its middle and posterior portions, and the frænum are the seats of disease. If the disease be limited to the edge or to the anterior portion of the prepuce, and when the inner layer is sufficiently large and moveable, removal of the anterior half of the prepuce is sufficient. One should retain as much as possible of the outer layer, and avoid sparing the but slightly stretched inner layer. Ulcers should be cauterized with a saturated solution of sulphate of copper. After bringing together the margins of the wound as closely as possible, some cotton-wool should be applied. After the removal of the dressing on the second or third day, complete union may not unfrequently be found. Complete cicatrization may be prevented by remaining infiltrations, by gangrenous or diphtheritic destruction, by defective treatment of the wound, and in consequence of a bad constitution. When there is serous swelling of the prepuce, with acute lymphangitis on the dorsum of the penis, the operation must be delayed. On the other hand, the performance of the operation is not contraindicated by acute inflammation of the inguinal glands or by a methodical inunction treatment.

Art. 201.—*Case of Priapism Lasting Six Weeks; Recovery.*

Under the care of Mr. Hird, at Charing Cross Hospital.

(*The Lancet,* January 18.)

Persistent priapism is sometimes met with in cases of disease or injury of the spinal cord or cerebellum, but apart from morbid conditions of these organs it is exceedingly rare. By some it is considered to be the result of the extravasation of blood; by others to be due to nervous reflex irritation. The effect of treatment seems to indicate the latter as being more correct; for incisions into the penis, to let out the extravasated blood, have not been productive of any good result, whereas the administration of bromide of potassium has, in several instances, been followed by relief and gradual subsidence of the symptoms.

For the notes of the following case we are indebted to Dr. Mitchell Bruce.

C. C——, aged fifty-five, an Irishman, and a porter at Covent Garden, was admitted into hospital on September 28th, 1872. The patient, according to his own account, had been a healthy man, with the single exception that three years ago he suffered from priapism for three or four days, the affection coming on suddenly in the daytime, and gradually passing off. The priapism was accompanied by severe pain in the penis, but by no symptom in the back, legs, bladder, or bowels. Since the time indicated the patient had not suffered from any such disease in any degree until the present. The patient was confessedly a drunkard; every day, or every second day, he was drunk upon rum; he never had less than four quarterns a day. He also stated that he had neither lately nor at any time been given to sexual excess. On September 23rd, about four A.M., the patient awoke to find his penis erect and painful, after no provocation whatever; and this condition continued up to his admission.

On being admitted, the patient was found to be suffering from well-marked priapism, with constant pain in the penis. The organ was very tender, but there was no redness at any spot on it, or in the neighbourhood, nor was there any distortion or want of uniformity in the considerable and general unnatural enlargement. The patient lay on his back, with his knees drawn up, to prevent the contact of the bedclothes. The pain in the penis prevented sleep. There was no pain in the back, no pain or other abnormal symptom in the legs; micturition was attended with little or no discomfort; the bowels were somewhat constipated. Ordered a purgative and hot fomentations to the penis.

September 30th.—Condition unchanged. To take ten drops of tincture of belladonna every six hours, and ten drops of antimonial wine in an ounce of white mixture three times a day.

October 3rd.—No alteration; no sleep has been obtained. To have at once five grains of calomel and six grains of compound extract of colocynth, and a pill containing five grains of camphor every night.

7th.—No change. The purgative pill did not act much. Ordered twenty grains of bromide of potassium three times a day.

8th.—Repeat the calomel pill.

9th.—Condition the same as above. To take at night fifteen drops of tincture of belladonna in an ounce of camphor mixture.

10th.—Still sleeps badly; no diminution of the priapism. To have a draught containing twenty grains of chloral hydrate at bedtime. A small quantity of extract of belladonna to be rubbed into the skin of the perineum.

19th.—Symptoms still the same. The patient was seen to-day by Mr. Hancock and Dr. Headland. Ordered to have an eight-grain compound aloes pill at once; and to take one-eighth of a grain of tartarized antimony and a drachm of the solution of acetate of ammonia in an ounce of camphor mixture every four hours.

22nd.—Condition unaltered. To have five grains of iodide of potassium three times a day (this was not administered until the 29th).

25th.—The patient is conscious of some relaxation of the erect feeling, and the pain is less.

29th.—Both the priapism and the pain have nearly disappeared. The patient wishes to sit up. The appetite is good, as it has been throughout the disease.

30th.—Last evening, about nine o'clock, half an hour after taking the five-grain dose of iodide of potassium, the patient was seized with all the symptoms of extremely marked iodism. He did not sleep during the night. This morning the symptoms are still present, but evidently subsiding. There is no salivation nor eruption on the skin. Pulse 68, regular, and small. The penis is no longer erect, but although flapped over upon the thigh it is quite firm to the touch. It is free from pain.

November 1st.—The symptoms of iodism have perfectly subsided.

4th.—Penis still abnormally stiff, with slight pain at the point, and tenderness. The patient volunteers the statement that he has "rubbed the point," but could induce no erection by the experiment.

6th.—Condition improving; relaxation not quite complete.

8th.—The patient is out of bed; there is still stiffness of the penis; no erection has occurred.

11th.—The penis is perfectly lax; no erection. The patient was discharged to-day cured.

It must be added that on one occasion, the date of which was not recorded, the patient was put under the influence of chloroform without effect upon the priapism.

Art. 202.—*A Modification of the Operation for Phymosis.*

By Harrison Allen, M.D.

(*Philadelphia Medical Times*, No. 46, 1872.)

The modification proposed by Dr. Allen is based upon the truth of the following statements:—1. The glans penis lies obliquely backwards to the longitudinal axis of the penis. 2. Contraction of the preputial orifice, from chancres, scars, or other rarer conditions, may create phymosis independently of other causes, but, as a rule, acquired phymosis, particularly if it be complicated with venereal disease, is due to inflammatory thickening of the entire mucous layer. In such cases the glans is compressed, as with a rind, by a stiff inelastic membrane. If there be much narrowing of the preputial chamber, the penis is jammed backwards in its sheath, and its frænum is made tense from a fixed point below, and lies obliquely upwards and backwards.

Writers have cautioned us, in selecting the method of Ricord, not to be guided by the outline of the glans penis as defined through the integument, else too much of the latter may be excised. But even when the operation is properly performed, the incision imperfectly exposes the glans, thus making another incision through the mucous layer necessary. Besides this, the frænum is liable to mutilation by the first cut. This latter is an awkward occurrence, since union, under the best of circumstances, lingers about the frænum, and an undesirable bagginess of the integument at this point too often remains.

Thus briefly indicates Dr. Allen that the essential points of an opera-

tion for phymosis should be those that secure integrity of the frænum as well as exemption from too free incision of the skin-layer of the prepuce.

The method of meeting these points is simple. Having first slit up the prepuce upon a grooved director—thus permitting the penis to assume its normal position to the sheath, and the true relations between it and the foreskin to be accurately determined—the operator takes a straight needle, of moderate size, and arming it with a single strand of well-annealed silver wire, transfixes both layers of the foreskin about a fourth of an inch in advance of the corona. Before pushing the needle through, that portion of the foreskin in front of the needle is snipped off with the scissors—sufficient tissue being reserved to bring the edges together—when a twisted suture is effected. The needle is next inserted at a point midway to the frænum, and the same procedure repeated as in the first instance. In consequence of the redundancy of the skin about the frænum, the division of the mucous layer is best effected at that point before that of the skin. The scalpel is better than the scissors for this purpose. The skin should be removed by the latter instrument after transfixion. Two sutures introduced upon the opposite side, in the manner already given, complete the operation. Should the spaces between the wires gape, they may be approximated by silk threads. These may be removed within twenty-four hours. The silver wires should be retained a day longer.

It will at once be seen that the retraction of the skin-layer is prevented by transfixing the two layers at the same point before the removal of the integument. This, indeed, is the gist of the whole matter. The slitting of the prepuce, instead of being a mere expedient to remove pressure from a threatened glans, or to explore for a concealed chancre—uses to which it is commonly restricted—becomes a stage of the operation of circumcision. Moreover, it enables the operator to dispense with the use of the fenestrated forceps.

This operation has been performed by Dr. Allen and others fourteen times, and has given entire satisfaction in every instance.

Art. 203.—*On Paraphimosis.*

By M. Charles Mauriac.

(*Mémoire sur le Paraphimosis.* Paris, 1873.)

1. In all cases of paraphimosis not complicated by simple chancres one ought always to attempt reduction, whatever be the degree and the stage of the affection.

2. Loosening produced by means of a long median and superior incision is indicated only in those cases of paraphimosis where the contraction coincides with shortness of the prepuce.

3. When paraphimosis is complicated by auto-inoculable chancres, it is necessary to abstain rigorously from any operation with a cutting instrument. If reduction is possible, it should not be practised until the virulence of the ulcers has been destroyed with active caustics, such as chloride of zinc, &c.,

4. Gonorrhœa, primary syphilitic ulcers, simple balano-posthitis, and

mucous patches do not contra-indicate either reduction or operations with a cutting instrument.

5. If reduction be rendered impossible by adhesions, gangrene, phlegmonous inflammation of the prepuce and corona, phlebitis, abscess, &c., it is necessary to leave the paraphimosis to take its natural course, care being taken in all instances by the use of appropriate means to subdue complications and to hasten resolution of the preputial swelling and cicatrization of the solution of continuity produced by the strangulation.

6. Expectation is formally indicated in cases of irreducible phimosis complicated with chancres until the healing of these latter lesions.

7. Paraphimosis when not reduced always leaves after it a subpreputial tumour constituted by hypertrophy and chronic œdema of the inferior half of the prepuce.

8. It is necessary to remove this tumour by means of an inferior demi-circumcision in order to complete the superior demi-circumcision produced by ulceration of the strangulated part.

9. Complete circumcision performed behind the glans in cases of irreducible paraphimosis can be practised only in cases where the prepuce is very long. It ought not to be done save during the period of resolution, and when the ulceration of the strangulated portion has produced an insufficient superior demi-circumcision.

Art. 204.—*Coincidences in Suspected Strangulated Hernia.*

By C. F. Maunder, F.R.C.S. Eng. (Exam.), Surgeon to the London Hospital.

(*Medical Times and Gazette*, May 24.)

It is a good rule in the surgery of hernia, when symptoms of strangulation exist which cannot be positively explained or ascribed to other causes, to explore either a hernia of a doubtful nature or a hernial region. Mr. Maunder has probably operated on a hundred cases of strangulated hernia, and the two following coincidences, recently under observation, are worthy of record, as being previously unknown to him, and possibly to others also.

"Case 1.—A male, seventy years of age, the subject for many years of reducible scrotal hernia of the left side, suddenly experiences pain in the left groin and while the hernia is down. By manipulation reduction is effected, and vomiting sets in, and persists for many hours up to the moment of my seeing him. He is now pale and exhausted. The evidences of old hernia at the groin, short of the protrusion itself, are ample, and the finger finds nothing unusual in the inguinal canal. On putting the patient erect nothing protruded even when he coughed. Suspecting either *reductio en masse* or ruptured neck of sac and false reduction, exploration of the region was practised. Nothing explanatory of the symptoms was found, but the finger in the cavity of the belly detected a rounded swelling behind the hypogastric region, but not coming forward to the anterior abdominal wall as the distended bladder does. A catheter introduced proved that the swelling was not bladder. It then occurred to me that the tumour might be an hydatid cyst, I having on a former occasion tapped per rectum such a cyst, which, developed

in the pelvis, caused retention of urine. On making a digital examination per rectum, I failed to discover the swelling, and withheld the trocar, and, as the sequel will show, fortunately so too. The patient died, and at a post-mortem examination he was found to be the subject of a ruptured aneurism. The hernial protrusion had been reduced by taxis, and the same moment a quantity of blood had been poured out behind the peritoneum, filling the iliac fossa and part of pelvis, and, coming forward to the anterior abdominal wall, had prevented the re-descent of bowel. Strangulation had never existed.

"Case II.—A few days ago (May 6th), I saw in consultation a male, between sixty and seventy years of age, who six days previously had rather suddenly experienced great discomfort in the right groin, the seat of an old rupture. He took aperient medicine, which apparently opened the bowels very freely. Forty hours before I saw him he had called in a medical man, vomiting having now set in and a second aperient having failed to promote alvine evacuation. A hernia protruding at the right inguinal ring was now found by the medical attendant, and reduced by him without force. Vomiting persisted, and the ejecta probably came from the lower part of the small intestine. I was now summoned, and as we proceeded to the residence of the patient the possibility of cæcitis with the hernia as a coincidence was suggested. The abdomen was somewhat distended and tense, and pain and tenderness were referred to the region of the hernia, which latter was just appreciable at an enlarged external inguinal ring. When the patient was placed erect, the swelling was scarcely more prominent. It was agreed to explore this swelling. On dividing the structures over the swelling, a mass of fat was soon reached (as is often the case in femoral hernia), and was at once isolated by the finger except in one direction—backwards through the posterior wall of the inguinal canal. I now carefully laid open the free end of the swelling, and passed my finger into a cavity lined by peritoneum, and then on through a very narrow mouth into the cavity of the abdomen. On withdrawing the finger it was smeared with a little dirty-looking pus from the cavity of the peritoneum, and the intestines in the right iliac region felt to be matted together. So far as I am aware, this is the first instance in which I have operated on a *direct* inguinal hernia. To-day (May 11th) I hear from Dr. Gillies that the patient is doing well, that vomiting persisted for twenty-four hours after the operation, and the wound healed by primary union."

While on the subject of hernia, Mr. Maunder draws attention to a subject not sufficiently ventilated—the danger of administering opium or morphia in cases of strangulation unless it is understood that the rupture must either be reduced or be explored after the lapse of a few hours only. Quite recently (May 13th) he saw in consultation a patient sixty-seven years of age, the subject of a strangulated femoral hernia, who had vomited. On two consecutive nights a quarter of a grain of morphia had been administered, with the effect of checking vomiting and of allowing the stomach to tolerate small quantities of nourishment. An incision exposed a large knuckle of bowel highly congested, roughened by lymph, and tightly constricted. The sac contained a good quantity of dirty sanguineous fluid.

Art. 205.—*The Comparative Merits of Craniotomy and the Cæsarean Section in Pelves with a Conjugate diameter of two and a half inches.*

By John S. Parry, M.D.

(*American Journal of Obstetrics,* February.)

Dr. Parry discusses this question, and gives the following as his conclusions:—

1. If gestation has advanced to the full term and the conjugate diameter of the superior strait be two inches and a half, craniotomy affords the mother no better chance for recovery than Cæsarean section; and if the diameter be two inches or less, exclusive of the soft parts, it is the duty of the accoucheur to perform the gastro-hysterotomy rather than craniotomy.

2. The recorded histories of cephalotripsy in such cases afford us no evidence that it will compete with the Cæsarean section in safety, while French and German experience seems to show that cranioclasm is both more safe and efficient.

3. English accoucheurs, who are the firmest supporters of cephalotripsy, have not yet recorded a sufficient number of facts to controvert this position.

Art. 206.—*On Spasm of the Sphincter Ani.*

By Dr. A. J. Amnéus.

(*Upsala läkarefören förhandl.* vii., 1872; *Schmidt's Jahrbücher,* No. 12, 1872.)

The terms *fissura ani* and *contractio ani,* commonly applied to this affection, are rejected by the author, in the first place, because fissure may occur without spasmodic contraction, and contraction without lesion of the mucous membrane; and in the second place, because with the term contraction one associates the idea of persistent muscular action, as occurs in the neighbourhood of diseased joints, whilst spasm of the sphincter ani is only a temporary condition. The author adopts spasm of the sphincter ani as the proper designation of this lesion, since by the term spasm one implies a temporary spasmodic contraction, the cause of which lies not in the muscle itself, but in the nerves proceeding to the muscle.

A spasmodic condition of the sphincter ani may result not only from irritation of the nerves which pass directly to this muscle, but also through reflex action from irritation of neighbouring nerves proceeding from the same trunk. Spasmodic conditions of the bladder and of the genital system may bring about spasmodic contraction of the sphincter ani, and the latter condition, also, may react on the bladder and genital system, so that what in one case is the cause of the affection may in another case be its result. The fact of the greater frequency of spasmus ani in women is explained by the greater frequency of affections of the

genital organs in the female than in the male sex. Abnormal position of the womb in the majority of cases causes intense contraction of the muscle, which frequently disappears without any other treatment after the replacing of the organ. A common cause of the affection is tardy evacuation of the bowels and the prolonged presence of fæcal masses in the intestine; intelligent patients reported to the author that the spasm had come on after they had noticed delay and difficulty in defæcation. Even after the defæcation hard lumps of fæcal matter may be left in the dilatation of the rectum above the sphincter, and there set up mechanical irritation of the muscle. Even the mechanical distension caused by the simple passage of a large quantity of hard excrement may suffice, without causing any injury of the mucous membrane or giving rise to considerable pain, to excite indirectly spasmodic muscular contractions. Fæcal causes of irritation, such as worms, ulcers, mucous tubercles, and other affections of the mucous membrane, may act in a similar manner. Probably even the quality of the fæces themselves may influence the condition of the intestinal mucous membrane; according to the author, the tenesmus of dysentery is to be explained by the local irritation and by the spasmodic contractions of the active and passive muscles of defæcation thus excited. A special group of causes is formed by such conditions as lead to dilatation and obstruction of the pelvic veins. Dr. Amnéus has observed but one undoubted case of this kind, but still thinks it very probable that spasm of the sphincter is often due to one of this class of causes.

The symptoms of a spasmodic contraction of the sphincter ani are mostly of a subjective nature. The patient experiences a sensation of obstruction in the rectum during defæcation, and sometimes during this act very severe pain, the intensity of which is in proportion to the degree of the lesion and the hardness and amount of the excrement. In some cases pain is absent, and the patient complains only of difficulty in passing the stools. Pain, when present, is but slight at the commencement of the affection, and afterwards increases more and more, though irregularly and not continuously; it is so peculiar that, in association with the sensation of a mechanical obstruction, it suffices for the determination of the diagnosis. In some cases in which Dr. Amnéus, notwithstanding the presence of these two symptoms, could not find any objective holding-point for determining the presence of the affection, he discovered a retroversion of an enlarged uterus, through which the calibre of a portion of the intestinal canal was encroached upon; the excrement pressed upon the fundus uteri, and probably through the contraction of the calibre of the intestine spasm of the sphincter was excited at each attempt at defæcation; after elevation of the retroverted uterus the difficulties attending defæcation were removed. The single objective symptom in spasm of the sphincter ani, and one which suffices for establishing the diagnosis, is contraction of the muscles when the finger is introduced for the purpose of exploring the rectum; this contraction is excited in some very well-marked cases by simple pressure on the outer coverings of the muscle; the force of this contraction stands in direct relation to the degree of the lesion.

The affection, according to the experience of Dr. Amnéus, occurs very frequently, and much more so than is generally supposed; it often

escapes observation however, especially when it is slight. The prognosis is good and the treatment generally successful. The lesion, even when far advanced, often disappears spontaneously, or after the removal of its cause. In most cases, however, a special treatment is required. According to the experience of Dr. Amnéus, fomentations, salves, and caustics are of little use, and purgatives have only a purgative action; the essential proceeding in the treatment is an operative one—viz., forcible dilatation. This operation is a very slight and satisfactory one, and requires neither special preparation nor much after-treatment, and is not attended with so much pain as is the process of defæcation in cases of advanced and severe spasm of the sphincter. Dr. Amnéus has practised the operation very frequently, and in one case only where the affection was complicated with hæmorrhoids, was it necessary to use an anæsthetic. The performance of the operation is always successful when it has been done with sufficient force, it lasts but for a few seconds, and almost always removes the affection once and for ever. The dilatation is produced by the index fingers, which are introduced into the anus with the dorsal surfaces in contact. The anus is then dilated by separating the fingers, and some laceration of the sphincter muscle is produced. A wholly sufficient amount of dilatation for an adult is produced by separating the fingers from each other to the extent of an inch and a half. Sometimes during the operation a considerable extent of mucous membrane is injured, but no disadvantage arises from this. Sometimes it may seem as if the mucous membrane would undergo prolapse between the fingers; it does not do so, however, but is retracted after the operation. After the removal of the fingers from the rectum the anus frequently remains patent, a condition owing to complete, or to almost complete, relaxation of the sphincter. Partial relaxation is sufficient in most cases for a successful result of the operation, but as it is difficult to determine when a sufficient amount of relaxation has been attained, Dr. Amnéus recommends the surgeon to aim at complete relaxation, especially as this does not give rise to any kind of harm. The only difficulty attending the operation, and one which frequently occurs, is due to a rapidly shrinking movement on the part of the patient, through which the fingers lose their hold.

This affection is seldom without complications. First among the results of spasm of the sphincter ani is accumulation of fæcal masses above the superior sphincter, which leads to habitual constipation, and is favoured by the unwillingness of the patient to go to stool in consequence of the pain resulting from this act. The collected fæcal masses, if they remain for a long time in the intestine, may act as both mechanical and chemical irritants upon the mucous membrane, and in this way set up intestinal catarrh. When there is much resistance in the sphincter and the peristaltic action of the intestine is weak, the accumulation of fæcal material may extend upwards, and the catarrh thus involve a considerable portion of the intestinal canal, become more intense, and lead to inflammatory conditions. With long continuance of these morbid conditions the whole digestive tract, and even the whole organism, may become sympathetically affected. Not unfrequently gastric catarrh and ulceration and general impairment of nutrition may be produced in this way. When the excrement, forced below the superior sphincter, fills

and distends the rectum, as often happens, the enlarged rectum may press upon neighbouring organs, causing in women displacements of the womb, and interfering in man with the bladder and prostate. Dr. Amnéus seeks to explain by this pressure the facts that retroversion of the womb occurs more frequently than anteversion, and that vesical catarrh occurs more frequently in men than in women. Through pressure upon the vessels and nerves of the pelvis disturbance may be produced which may give rise to sympathetic affections of remote parts, and even of the whole organism; the action of such fæcal accumulations in the rectum on the circulation of the blood is well known, and may lead directly to the most serious consequences and act upon remote organs.

The local changes which may be induced through spasm of the sphincter ani consist in prolapse of the rectal mucous membrane and in hæmorrhoids. Prolapse of the mucous membrane of the rectum does not take place before the spasm has attained some degree of intensity; it does not come on suddenly, but is gradually developed; small portions protrude for a time and then retract; these protrusive portions increase more and more in size until the prolapse can no longer be spontaneously retracted. When this is the case, the prolapsed mucous membrane is constantly compressed by the sphincter, the spasmodic contraction of which, as a result of persistent irritation, is also persistent; consequently the circulation of blood in the prolapsed portion is obstructed and there are produced venous stasis, pains, and hæmorrhoids, which last affection Dr. Amnéus regards as being nothing more than a certain form of prolapsus ani, in which the most important and prominent symptom is not protrusion, but swelling of the mucous membrane. What one generally indicates as hæmorrhoids is the protrusion of but a small portion of mucous membrane, whilst the annular protrusion goes by the name of prolapse. The fact that both the prolapsus ani and the hæmorrhoids are cured after removal of the spasm by forcible dilatation, is regarded by Dr. Amnéus as a practical proof of the correctness of this view.

Art. 207.—*On Artificial Dilatation of the Anus and Rectum with regard to the Exploration of, and Operations on, these Organs.*

By Professor G. Simon.

(*Langenbeck's Archiv*, Bd. xv. Heft 1, 1872; *Gazette Hebdomadaire*, No. 1, 1873.)

For a long time surgeons in exploring the anus and rectum have been content with introducing the index finger, or at the most two fingers. They have also used the bivalve speculum, which permits a more complete exploration, and facilitates operations on the rectum. Professor Simon has recently demonstrated that other and more important exploratory results may be obtained, and that the whole hand may be introduced into the rectum, and instruments be worked in this region, without producing in the structure of the walls those changes that are associated with forcible dilatation.

There are, Professor Simon states, two methods of dilating the anus and rectum—the sanguinary and the non-sanguinary.

In the non-sanguinary method the dilatation is performed during chloroformic anæsthesia, and it is remarkable to what extent the anus may be dilated whilst the patient is in this condition. It may be accomplished with the fingers, half the hand, and finally the whole hand. Provided there be no contraction of the pelvis, the whole hand and part of the forearm may be introduced. In most cases the hand, the circumference of which amounts to about twenty-five centimetres, produces in its introduction a small laceration of the anus, and in some exceptional cases it is necessary to make a small incision of the anus, in order to introduce the whole hand. When the hand has penetrated into the rectum as far as the sacral promontory, one may with three or four fingers penetrate as far as the sigmoid flexure, and be enabled, owing to the mobility of the rectum, to feel through its walls, the abdominal region as far as the kidney and the umbilical region, this exploration being free from danger.

One may by this means explore a part of the abdominal cavity, and consequently obtain valuable diagnostic indications in affections of the uterus, ovaries, and even the stomach and spleen. With the introduction of four fingers, that is to say, with half the hand, one may reach the upper part of the uterus, and even the ovaries. In man one will feel the bladder with precision, and be able to recognise the presence of calculi, and their number and size. In short, one may not only thus explore the rectum and part of the sigmoid flexure, but may make out tumours in the anterior wall of the abdomen, swellings of the mesenteric glands, and of the lower portions of the kidneys; that is to say, one may be able to feel all the organs contained in the lower two-thirds of the abdomnal cavity. In two cases of ovarian cysts, Professor Simon was able to determine by rectal exploration thus carried out, the width and length of the pedicles, the absence of adhesions, and finally, the presence in one case of two fibrous bodies in the fundus of the uterus. This proceeding enables one to form a precise diagnosis.

Sanguinary dilatations made by lateral incisions, are particularly convenient when it is necessary to perform operations on the rectum.

Dilatation, practised under the influence of an anæsthetic, by four fingers or with the whole hand, is indicated in a great number of the affections of the rectum. It is suitable, in the first place, in the extraction of foreign bodies, the examination and prehension of which are thus facilitated. In wounds of the rectum it favours healing, by allowing a free course to fæcal and suppurative materials. In fistula, the introduction of a speculum analogous to that devised by Dr. Sims, permits one to see the lesions and to operate with certainty, the author has thus been able to discover and to cure fistulæ running upwards for considerable distances. Many very interesting cases are reported, which prove the practical value of the proceedings carried out by the author.

Art. 208.—*On Stricture of the Rectum and its Treatment.**

By M. Verneuil.

(*Gazette Hebdomadaire*, No. 51, 1872.)

1. Stricture of the lower part of the rectum, complicated with anal fistula. Each element of this complex affection ought to be treated separately, under pain of obtaining but negative or incomplete results. In three patients unsuccessful operations were performed in the ordinary way on anal fistulæ, without any attention having been paid to the contraction of the rectum. In all these patients linear section of the obstacle was made after incision of the fistulæ, or at the same time, with the best results. Two patients who were severely afflicted have remained well since the operations; one performed in 1863, the other in the following year. A syphilitic female, operated on in 1866, died in 1870 from pulmonary tuberculization; but she did not subsequently suffer from any intestinal lesion. Another woman, brought to the Lariboisière Hospital in almost a dying state, went out in a good condition at the end of a few weeks. M. Verneuil was able to make out by the touch, however, that the rectum still presented a marked stricture. The two last operations reported by M. Verneuil are too recent (one a year, the other eight months ago) to justify one in regarding the cure as certain. The fistula, however, remained cicatrized, and the disturbances attributable to stricture have ceased.

The following are the rules of treatment carried out by M. Verneuil. There are two indications:—1st, to incise vertically the rectal wall from above downwards, so that the section comprehends the whole of the indurated ring; the whole thickness and the whole length of the stricture being thus divided: if possible the healthy wall of the rectum, near the upper limit of the stricture, should be incised over an extent of a few millimetres. 2ndly, to slit up all the fistulous tracts, accessory as well as principal, as in ordinary cases of anal fistula.

These two stages may be executed during one or several sittings, according to the gravity of the case and the extent of the disease. When possible it is preferable to incise the stricture at once, because this requires prompt relief, and the bad results of retention are thus prevented. Still if there be much induration, and great swelling of the soft parts of the perineum, this engorgement should be immediately relieved by incision of the chief superficial fistulæ.

A single vertical section of the stricture is generally sufficient; in one case, however, M. Verneuil made incisions in front and behind. The seat of section is most frequently determined by the situation and course of the fistulæ. It may be made either on a probe or a grooved sound. But if these instruments pass into the rectum at a given point below the superior limit of the stricture, it will be necessary to make an artificial track, passing through the healthy mucous membrane beyond the obstacle. This track may be made with a strong director or curved trocar, or with a strong curved and blunt-pointed needle, carrying a thick thread, which is to be sought for in the rectum by the left index

* Communicated to the Société de Chirurgie, Paris.

finger; one end of the thread is then brought outwards through the anus, whilst the other is retained in the track of the fistula. By means of this thread the chain of an écraseur may be passed. In cases of multiple fistulæ, situated at unequal distances from the margin of the anus, it is necessary to explore the different tracks, and to choose for the passage of the chain that which is the most direct and nearest the anus, provided, however, that this leads up to a point close to the stricture. One should always select, however, in preference the track which is nearest to the posterior median line, the relations of the rectum being more simple behind than in front or at the sides. If the indurations of the lateral parts mount too high, and the stricture be more accessible posteriorly, M. Verneuil recommends that the fistulous track be disregarded and that the posterior median section be made.

If the first stage has not been too long or too laborious, one should at once incise the fistulæ, several écraseurs being used simultaneously, overhanging edges and subcutaneous sinuses may be incised with the bistoury, but on condition that the margins and base of the resulting wounds be touched with the actual cautery. M. Verneuil cauterizes, though very slightly, the wound made by the écraseur; cauterization is the most powerful resolvent of indurations and callosities. The subsequent dressing is very simple, and consists in cold water compresses, two or three irrigations daily with chlorinated water, or a mild solution of alcohol or carbolic acid.

To resume: vertical section of the rectum performed in the median line with the écraseur, constitutes an efficacious, innocent, and easy means for treating fibrous or spasmodic stricture of the inferior part of the rectum, whenever the obstacle is not situated at a distance of more than five centimetres from the anus. When the different proceedings of anal dilatation have failed, it is necessary to have recourse to linear rectotomy.

2. In cancerous stricture of the rectum, one acts not to produce a radical cure, but only to relieve suffering. Of three patients operated on by M. Verneuil, two were much relieved; the third died from peritonitis six days after the operation.

(c) CONCERNING THE UPPER EXTREMITY.

ART. 209.—*On the Operative Treatment of Paralysis Radialis (Musculo-Spiral Nerve).*

By Professor BUSCH.

(*Berliner Klinische Wochenschrift*, 34, 1872; *Schmidt's Jahrbücher*, No. 11, 1872.)

The author reports an interesting case of complete paralysis of the radial nerve, which occurred after fracture of the arm. It had lasted for sixteen months, and presented the following symptoms: — The exterior muscles of the forearm were much diminished in size, and neither directly nor indirectly could be excited by the strongest faradic current. Voluntary movement of the musscles supplied by musculo-

spiral nerve was quite lost; the sensibility of the region, supplied by the same nerve, was considerably reduced, and over a small extent of the back of the hand quite extinct.

Prof. Busch, supposing this condition was the result of compression of the nerve by callus, cut down upon the trunk above the external condyle. Immediately above this process the nerve was of normal size and appearance. Faradic irritation of this portion produced, though only when very intense, fibrillar contractions in the supinator longus muscle. Farther upwards the nerve, along an extent of an inch and a half, was found enclosed in callus, and firmly compressed. After removal of a portion of the callus with a chisel, it was seen flat and small, and resembling ligament. Immediately after the nerve had been freed from its osseous canal the patient was able to extend the second and third fingers, and formication, which had been previously felt, disappeared. On the following day the other fingers could be extended, and the thumb abducted. On the fourth day all the muscles at the back of the forearm reacted to weak faradization.

Here then was voluntary movement as soon as ever the influence of the will could be conducted to the muscles, although previously reaction to faradization had not taken place. The elements serving for the conduction of the stimulus and the compressed portion of nerve must have remained in a normal condition, whilst the susceptibility to the action of electricity had been abolished.

A remarkable point in this case is the sudden restoration of voluntary movement, and the normally maintained nutrition, at least in part, of the muscles, although their function had been abrogated for sixteen months, and they had apparently undergone advanced fatty degeneration.

The author alludes to an analogous case which was observed and recorded by him in 1863. Here also the musculo-spiral nerve had been paralysed after fracture of the humerus, the nerve being so firmly compressed between the callus and a bridge of scar-tisssue about two inches in length, that complete paralysis, both of motion and sensation, was the result. Immediately after the removal of the compressing agent the patient was able to extend the hand. Subsequently the functions of the limb were completely restored. In this case the operation was performed soon after the occurrence of the fracture.

Art. 210.—*Case of Subclavian Aneurism Treated by Temporary Compression of the Innominate Artery, followed by Ligature.**

By E. R. Bickersteth, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.

(*British Medical Journal*, Dec. 7, 1872.)

The patient, a strong, healthy-looking dock porter, aged forty, was admitted into hospital on April 15th, 1868. He was suffering from an

* Read at a Meeting of the Royal Medical and Chirurgical Society, Nov. 26th.

aneurism from the third part of the right subclavian artery, traceable to a strain incurred while moving a heavy weight about three weeks previously. It was about the size of a hen's egg, and presented no features of difficulty in diagnosis. A review of the various plans attempted for the cure of this complaint seemed so unpromising that it was resolved to try temporary compression of the innominate artery. Mr. Porter, of Dublin, had attempted this in 1867 by means of an instrument not unlike a miniature lithotrite, between the blades of which the artery, after having been laid bare, was compressed. The pressure here, however, being rigid and unyielding, produced a slough in the coats of the vessel, and fatal hæmorrhage resulted. In this instance an attempt was made to secure elastic compression, sufficient to stop the flow of blood through the vessel, but not strong enough to injure its coats. The instrument was devised, consisting of a hollow stem with a transverse bar, having eyes at its extremities. In the hollow stem worked a screw, having also a transverse bar, to the extremities of which two india-rubber bands or accumulators were attached. A wire passed through the eyes of the lower bar, and was attached to hooks at the end of the accumulators, and by means of this wire the artery was compressed against the lower transverse bar. By moving the screw the accumulators were put on the stretch and the wire tightened upon the vessel. The great difficulty was to find a suitable wire; one which should be quite pliable and supple, and yet sufficiently strong. Gold, copper, silver, aluminium, and lead were tried upon an innominate artery removed from the dead subject, upon which the instrument was placed, while a very powerful stream of water was passed along the vessel. The last-mentioned was adopted—namely, lead.

On May 5th the operation was performed. An incision was made parallel with the anterior edge of the sterno-mastoid as low as the sterno-clavicular articulation, and another from this point outwards along the clavicle. The flap thus formed was raised, the sterno-mastoid, sterno-hyoid, and sterno-thyroid cut through, and the sheath of the common carotid laid bare; this was followed down to where it meets the subclavian, and the innominate then came into view. A portion of the sheath of the latter was separated, an aneurism needle armed with thread passed beneath the vessel, and by means of this the lead wire was pulled through. The clamp was passed down on the wire and screwed up, when pulsation in the aneurism and in the radial at once ceased. The end of the instrument was out of the wound a long way, and moved like the pendulum of a clock with every beat of the innominate.

For the first forty-eight hours everything progressed most satisfactorily, but at the end of that time pulsation was found in the tumour, and the house-surgeon on proceeding to tighten up the clamp, found that it did not act. A few hours afterwards Mr. Bickersteth, having had the patient put under chloroform, opened up the wound, and found that the constant sawing action produced by the impulse of the artery had cut through the lead wire at the point where it passed through one of the eyes of the transverse bar. As the instrument seemed now useless, two strong silk ligatures were put beneath the vessel, one above and one below the point where the lead wire had been. This second operation was accomplished with the greatest ease.

The patient went on tolerably well till the evening of the fifth day after this last operation, when some hæmorrhage occurred. On the sixth day three attacks ensued, and on the last occasion the loss of blood was so great and so uncontrollable that the patient died rapidly in a convulsed condition. Loose shot was poured into the wound on the last two occasions.

The post-mortem examination showed the wound healthy, the innominate from the aorta to the point of ligature filled with a firm tightly fitting clot, the common carotid empty, the subclavian empty as far as the aneurism, the aneurism itself filled with firm, laminated coagulum, and the subclavian beyond it also occluded. The aneurism was practically cured. The hæmorrhage had occurred on the distal side of the ligature.

Art. 211.—*Ligation of the Third Portion of the Subclavian Artery and Amputation at the Shoulder-joint.*

By Alfred Kinney, M.D.

(*Pacific Medical and Surgical Journal*, Nov. 1872.)

"J. S., aged thirty-five, a healthy Irish labourer, was run over by a railroad car, at the East Portland depôt, June 6th, at eleven A.M. A physician saw him immediately afterward, at the Railroad Hospital, and controlled the hæmorrhage until my arrival, an hour later. I found the bones and muscular tissues of the left arm and forearm completely crushed; small fragments of the humerus having been driven in and around the shoulder-joint, lacerating the axillary artery as far up as its origin.

"On account of the very extensive laceration of the axillary artery, we determined, during a hasty consultation, to ligate the subclavian before removing the arm, which I did in the third portion, assisted by Drs. Rafferty and Aug. C. Kinney; and afterwards severed the arm at the shoulder-joint.

"Having removed the spiculæ of bone, and cut away all the badly lacerated and extravasated tissues from the shoulder, we trimmed the least contused portions of the integument into flaps, much like those of the Baron Larrey operation. The wound was united by silk sutures, leaving an opening at the most dependent part for drainage, and dressed with oakum and a weak solution of carbolic acid. The patient, who was suffering from the severity of the shock, was given stimulants in large doses.

"There were no other symptoms than those usually following such severe injuries, until the fifth day, when gangrene commenced in the wound: the shoulder in the course of a few hours becoming œdematous; the integument changed to a darker colour, and a thin, offensive discharge ran from the wound. Fever was very high, and the pulse 140 per minute. Immediately the partially united wound was laid open by free incisions, and thoroughly washed out with a strong solution of carbolic acid. The gangrene ceased, and in a few days the mortified

tegument was left, after the separation, to cover the bony prominence, excepting a chasm anteriorly, which filled up with granulations and cicatrized over within two months after the time of the accident.

"The ligature came away from the subclavian on the seventeenth day. The patient is now entirely well."

Art. 212.—*On Scapulo-Humeral Periarthritis.*

By Dr. Simon Duplay.

(*Archives Générales de Médecine*, Nov. 1872.)

1. Direct and indirect injuries of the shoulder are often followed by inflammation of the tissues which surround the scapulo-humeral articulation, and this periarthritis in being localized, more especially in the sub-acromial serous sac and in the sub-deltoid cellular tissue, determines thickening and induration of the cellular tissue and the walls of the sub-acromial sac, formation of adhesions and fibrous bands which impede or completely prevent gliding of the upper extremity of the humerus on the under surface of the acromial arch and along the deep surface of the deltoid muscle.

2. This periarthritis may be distinguished from an intra-articular affection by the absence of deformity and swelling. The latter, when it is present in the acute stage, affects only the apex of the shoulder. Periarthritis is characterized by the following symptoms:

(*a*) Impeded movement at the shoulder. This is sometimes so marked that the arm cannot be raised to the horizontal position. In all the movements the relations of the humerus to the scapula remain constant, and this latter bone moves at its clavicular articulation. In most cases these movements are attended with crepitation.

(*b*) Pain excited by movements and seated, not in the region of the joint, but below the acromion at the level of the humeral insertion of the deltoid muscle. Pain excited by pressure below the acromion at the level of the coracoid process. Sometimes formication and a sensation of numbness along the arm, forearm, and hand.

(*c*) Sometimes the arm is semi-flexed, extension causing pain in front of the elbow, and in the neighbourhood of the coracoid process.

3. Periarthritis of the shoulder ought to be treated carefully at its commencement, in order to prevent stiffness, which would be the consequence of this affection. Gymnastic exercise of the limb, electricity, douches, and shampooing constitute the best means of treatment.

4. When one has to deal with chronic periarthritis, the sole means of procuring a rapid and complete cure, is rupture of the fibrous bands with great force, and at a single sitting. With this operation, which should be repeated if the result obtained by the first operation be not satisfactory, chloroform is indispensable.

5. Finally, after the rupture of the adhesions, it is necessary to

submit the patient for some time to the same means that have been already indicated (gymnastics, electricity, douches, shampooing), until the shoulder has regained the integrity of its movements.

Art. 213.—*Clinical Remarks on Excision of the Shoulder-joint and of the Wrist-joint.*

By John Erichsen, F.R.C.S.

(*The Lancet*, Jan. 11.)

Excision of a joint may be required in disease or compound injury of the articular structures; but the following remarks will apply only to resection of diseased joints, and in the first place to that of the shoulder-joint.

About May, 1870, a healthy boy, aged fourteen, struck his left shoulder against the corner of a wall, and, although nothing was noticed for some months, inflammation supervened, and about nine months after the receipt of the injury a large abscess formed behind the shoulder. The abscess was opened, but nothing but blood escaped till the fourth day, when pus was freely discharged. A sinus leading down to carious bone resulted. On September 17th, 1872, the boy was admitted into the University College Hospital, and was examined by Mr. Heath, who detected dead bone at the upper part of the humerus, and advised an operation. On October 2nd, the boy being under the influence of chloroform, Mr. Erichsen examined the joint with a probe, and found extensive disease of the scapula as well as of the humerus. A longitudinal incision was made from the sinus (which was just behind the posterior edge of the deltoid) through the deltoid muscle, and the joint exposed. The head of the bone was then sawn off, and the dead bone in and around the glenoid cavity gouged out. The humerus was then replaced, and the wound closed with wire sutures. The boy progressed without a bad symptom, and by the 21st of the same month was nearly well. On the 28th passive motion was commenced; and on November 9th the boy could move the limb without difficulty or pain. The wound was nearly closed, although there was a considerable discharge from the old sinus.

In the healthy shoulder-joint there are five movements—namely, flexion, extension, adduction, abduction, and rotation, and it is desirable to preserve as many of these as possible, although some are necessarily destroyed. The joint in this case was incurably diseased, as the articular structures were deeply affected, and death might have resulted from hectic; and if the joint had not been excised, amputation of the limb, with excision of part of the scapula, would have been necessary. The object of the operation was, therefore, to remove the diseased structure, and thus probably to save the patient's life, and to save the limb by removing only the diseased joint. In the upper limb it is all-important to preserve the movements of the hand, for without the hand the upper limb is practically useless, but leave the hand and it matters little how much of the upper portion of the limb be removed. Now,

excision of the shoulder-joint leaves the movements of the elbow-and-wrist-joints free; still the limb is crippled. To what extent? What movements are destroyed? Much depends on the kind of operation performed. The older operation was to make an anterior flap, and thus to cut through the insertion of the deltoid muscle; but the more modern operation does not interfere with the insertion of this muscle, as the incision is made in the course of the fibres of the muscle. But all the muscles attached to the tuberosities are sacrificed, as the line of section must be through the surgical neck of the bone, the disease rarely stopping at the anatomical neck. There will, therefore, be a loss of the overhand movements, while the underhand movements will remain practically perfect. This leaves a useful limb, for the overhand movements are rarely required, and for nearly all ordinary occupations the underhand movements are sufficient. The after-treatment consists in keeping the limb at rest for three or four weeks, and then exercising passive motion. The fistulous opening may continue to discharge for a long time, as a large cavity is left, which may take months or even a year to close.

The old operation for excision of the wrist-joint consisted in exposing the joint by making a semilunar dorsal flap and cutting through the extensor tendons of the wrist and hand. The modern operation, which was first proposed by Professor Lister, preserves both the flexor and extensor tendons. The movements of the wrist are those of flexion and extension, and for this purpose there are five sets of muscles—viz., those of the thumb, the extensors of the fingers, the flexors of the fingers, the extensors of the wrist, and lastly, the flexors of the wrist. In Lister's operation the extensors and flexors of the thumb and the extensors and flexors of the fingers are preserved, but the extensors of the wrist are necessarily divided; the flexor carpi ulnaris is left attached to the pisiform bone, and the flexor carpi radialis usually escapes from being inserted low down into the second metacarpal bone. The only muscles therefore that are necessarily divided are the extensors of the wrist. The diseased carpus, with the heads of the metacarpal bones, and the end of the radius and ulna, are removed, care being taken to leave the radius and ulna, especially the styloid process, as long as possible. By this means the tendency to displacement to the ulnar side is to a great extent counteracted. The object is to get anchylosis at the wrist, but to preserve the movements of the fingers. With these movements the patient can write and perform many useful acts. Although the details are very complicated, the broad principle of the operation is to save the movements of the thumb and fingers, and thus to gain a useful hand. The only vessels in danger in this operation are the radial and deep palmar arch, and the latter is best avoided by not cutting below the bases of metacarpal bones.

Art. 214.—*Report of a Case of Suppuration of the Elbow-joint.*

By William MacCormac, F.R.C.S., Surgeon to St. Thomas's Hospital.

(*Medical Times and Gazette*, May 3.)

At a meeting of the Clinical Society of London, March 14th, Mr. MacCormac exhibited a patient who had suffered from suppuration of the elbow-joint, in whom he had eight weeks before punctured the joint and removed a quantity of pus. This operation had resulted in the complete recovery of the motions of the articulation. A. K., aged sixteen, a rather delicate-looking boy, presented himself to Mr. MacCormac at St. Thomas's Hospital on Jan. 17th. In May last he was a patient in St. George's Hospital for an abscess in the upper part of the thigh; and for the last fourteen or fifteen months he had suffered from periodical attacks of pain and swelling in the right elbow. The joint would swell, become very painful, and then after three or four days the symptoms would subside, and the use of the joint be perfectly restored. He believed that in the first instance he had sustained a severe wrench of the elbow. When Mr. MacCormac first saw him the elbow was much swollen, in the manner characteristic of effusion within the joint; the skin over it was red and very tense; distinct fluctuation and pitting of the skin could be obtained on pressure. The boy was suffering intense pain, which made him cry aloud at the very thought of an examination of the joint. His countenance bore a worn and anxious expression. His tongue was coated, and his pulse very frequent. The swelling and pain had commenced on the Monday previous, Jan. 13th, without assignable cause, and the boy stated that he got no sleep or rest, not even taking off his clothes from that time till he came to the hospital. All the symptoms pointed to acute suppuration within the joint, which Mr. MacCormac accordingly punctured with the fine canula trocar of an aspirating syringe, and drew off between three and four ounces of pus mingled with some flakes of lymph and altered synovia. The puncture was made opposite the line of articulation, and midway between the olecranon and external condyle. The boy was then sent to bed, and his arm placed on a well-padded rectangular splint. The relief afforded by the puncture was immediate and permanent. The puncture healed at once, and it could now only be detected by a faint stain at the place where the needle was inserted. He remained in hospital rather less than four weeks, during which the improvement was continuous. His arm was, however, kept on the splint for six weeks. At the end of four weeks there had not been the slightest return of pain, the swelling of the parts around the joint had gradually disappeared, and he was able to move the joint without feeling even uneasiness. On Feb. 28th the splint was removed. There still remained slight thickening of the lower end of the humerus, and also of the back of the olecranon. The boy could not fully extend the arm, but with this exception the movements of the joint were absolutely perfect. His strength and health had otherwise greatly improved. Mr. Mac-

Cormac, in presenting the lad for the inspection of the members, said that, though the result of one case must be taken *quantum valeat*, he could not but regard it as furnishing much encouragement for the use of similar means on other occasions. The history of a case of suppurating joint seldom furnished so satisfactory a conclusion.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 215.—*On Excision of the Knee-joint.*

By RICHARD G. BUTCHER, M.R.I.A., University Lecturer on Operative Surgery, and Surgeon to Sir P. Dun's Hospital, Dublin.

(*Pamphlet, Illustrated with Lithographs.* Dublin. 1872.)

Some years since Mr. Butcher laid down the following rules. He has turned out, successfully cured, many cases according to their direction, and he brings forth one, lately operated on and cured, to prove the certainty with which a satisfactory issue may be looked for if the observations which he has so strenuously urged be strictly adhered to:—

"1. *The judicious selection of the case.*—The bones not being diseased far beyond their articular surface, which, if upon section found to be a little more than had been expected, the part should be gouged out, or an additional thin slice removed; but if to a greater extent, amputation should be at once resorted to, and as recorded in my work on *Operative Surgery*, with a hope of excellent success. Again, amputation, as I have shown, may be performed some days after excision, should any unfortunate circumstance in the management of the case demand it. I have recorded seven instances of amputation of the thigh, and all made rapid recovery save one.

"2. *The* H *incision should be preferred*, and the perpendicular strokes placed well back, just in front of the posterior wall of the joint, so as to allow all fluids and discharges to drain off—far more effective and safer than any opening made in the popliteal space. No portions of the flaps should be curtailed, though they may be thinned of any thickened fibrinous matter or diseased synovial membrane; the latter particularly should be clipped away with strong scissors. All ligamentous fibres, both around and within the joint, should be cut through, and the extremities of the bones fairly freed and exposed, great caution being taken not to break up the posterior wall of the joint. It should be set free from the bones in this way:—This fibrous structure, strengthened by the expansion of the semi-membranous muscle, should be detached with the knife from the edge of the tibia, only to about the eighth of an inch in depth, and then the fibrous structure forced down from the tibia to the required extent with the handle of the knife, and so in a similar manner it should be set free from the femur.

"3. *The patella should be taken away in all cases, whether diseased or not*, and then the section of the bones, well thrust out in front, should be made with 'Butcher's saw,' from *behind forward*, due attention being paid to the axis of the thigh-bone at the time of its division, that

the section be strictly at a right angle with the shaft; by this means *the artery* (popliteal) *is safe.*

"4. All bleeding vessels should be tied, or any that have sprung or retracted should be drawn out and secured, so as to guard against intermediary hæmorrhage.

"5. *While the patient is yet on the operating table, the limb should be placed in the horizontal position, either by gentle and steady traction, combined with pressure of the cut surface of the bone backwards, or, if necessary, the division of the hamstring tendons.* Their support behind in every case I look upon as of great value, therefore their section must be looked upon as a bad expedient towards straightening the limb.

"6. *During the adjustment of the bones, great caution should be exercised that their surfaces should be, throughout their extent, in contact, and that no soft parts intervene.* The flaps should be then laid down and connected by suture closely throughout their transverse division, while the lateral incisions should be brought together only at their extremities by one or two points, and the central portion of each left open just in front of the posterior wall of the joint, and lightly dressed with lint soaked in oil, thus affording a ready outlet for the escape of fluids. The extremity should next be cautiously laid upon 'Butcher's box-splint,' padded to the natural configuration of the limb, its sides elevated, foot-board applied, suitable pads introduced, and then the anterior splint laid on, taking the place of the assistant's hand, which, from the first, restrained the femur from projecting forward; then the straps buckled, the waistband applied, and the patient may with safety be removed to his bed. The bed should be prepared in this way, and consist of a couple of hair mattresses, laid one upon the other, evenly supported, and, intervening between the upper one and the sheet, a folded blanket, with feather pillows for supporting the head and shoulders; the bed should be moderately warmed so as to prevent the patient being chilled when put into it.

"7. *The limb should not be disturbed for several days,* the length of time depending a good deal on the season of the year when the operation is performed—whether it be in the heat of summer or in the cold of winter. After five or six days it may be necessary to let down the sides of the box-splint, to remove discharge, change internal pads, or soiled dressings, &c. By the apparatus named, the facilities for cleansing the limb are so efficient that it may not be required to lift the member from its support for even so long a period as six weeks, as evidenced in my own practice. Should, however, it be considered expedient to change all the dressings, the anterior splint should be steadily held back by assistants, and the limb pressed up to it, thus guarding against any starting of the femur forwards, or displacement laterally when lifted from its bed. When the box is prepared and freshly arranged, the limb, controlled after the manner mentioned, should be laid down, the side splint elevated, foot-board secured, and the straps over the anterior splint first tightened, so as to maintain it in that position, from which it was never suffered to change. I would impress the advice still further—if the straps be loosed for any purpose, *the hand of an assistant should steadily keep the anterior splint in its position,* and well pressed back, until the artificial support is again brought to bear upon it, and fastened.

"8. *In cases where large abscesses form in the vicinity of the excised joint,*

or up along the thigh, Chassaignac's drainage tubes may be used with the best hopes of success.

"9. *The free administration of stimulants and sedatives is imperatively demanded in all cases of excision*, regulated to a certain extent by age, sex, temperament, and habits."

Art. 216.—*Case of Excision of the Knee-joint for Disease in a Woman Fifty-three Years of Age, with Successful Result.**

By Frederick J. Gant, F.R.C.S., Surgeon to the Royal Free Hospital.

(*The Lancet*, Feb. 22.)

The object of this paper is to lay before the Society the particulars of a case which may be regarded as a notable exception to the typical conditions of disease that are appropriate for excision of the knee-joint or other joints. The chief peculiarities are these:—The disease, chronic rheumatic arthritis of twenty-three years' duration, resulting in imperfect anchylosis, with partial dislocation of the leg backwards, corresponding malposition of the limb, and increasing tendency to displacement; the age of the patient, fifty-three years; excision as performed in relation to the state of the joint; firm union in seven weeks; complication of after-teatment by accidental attack of erysipelas affecting the whole limb without destroying the union; permanent result, and measurement of the limb five months after operation.

In commenting on these particulars, the author was led to suggest the applicability of excision to a condition of disease which had not hitherto, he believed, been submitted to the operation, and at a more advanced period of life, thus comprising a larger class of cases, although of exceptional character; in the present instance the age of the patient being the most advanced in which excision of the knee had hitherto been practised, or at least recorded.

Since completing the history of this case, the author has found one other case in which excision of the knee-joint was performed by Mr. Curling for chronic rheumatic arthritis, and with a successful result, the patient's age, however, being twenty-three years.

Art. 217.—*Treatment of Transverse Fracture of the Patella.*

By William Stokes.

(*British Medical Journal*, May 31.)

At a meeting of the Surgical Society of Ireland, March 28th, Mr. W. Stokes read a paper on this subject. Four questions suggested them-

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* Read at a Meeting of the Royal Medical and Chirurgical Society, Feb. 11th.

selves—1. What was the cause of the separation of the fragments? 2. Whether the original cause of this phenomenon continued to act? 3. Can bony union ever take place in this injury? 4. What was the safest and most effectual method of treatment for it? For the production of transverse fracture it was necessary that the limb should be flexed. The cause was, in fact, muscular contraction of the quadriceps extensor. This muscle did not remain in a state of contraction, so that the continued separation of the fragments seemed to depend on an internal hæmorrhagic weeping. Bony union, again, was delayed in consequence of but one side of the patella being covered with periosteum. Passing to the fourth question, Mr. Stokes said that Malgaigne's hooks were most useful, but in some cases the pain caused by them was extreme. The treatment which seemed most suitable and satisfactory was that proposed by Mr. Sanborn, of America. Two illustrative cases were cited by Mr. Stokes, in one of which he had succeeded in obtaining perfect bony union, and in the other the closest apposition of the fragments, by this method.

Art. 218.—*On Supra-Condyloid Amputation of the Thigh.*

By William Stokes, Surgeon to Richmond Hospital.

(*Dublin Journal of Medical Science*, December, 1872.)

In drawing attention to this operation, Mr. Stokes says of six thigh amputations three were operated on by this method. The femoral section should in all cases be, not through the condyles, as in Gritti's operation, but above them. The section is *supra*, not *per*-condyloid, the division being from half to three-quarters of an inch above the antero-superior edge of the cartilage of incrustation. Secondly, the cartilaginous surface of the patella must in all cases be removed; thirdly, the anterior flap should be oval; and lastly, the posterior flap should be fully one-third of the length of the anterior flap. As regards this last point, Mr. Stokes is beginning to be inclined to the opinion that the posterior flap should be even somewhat longer than one-third of the anterior flap.

The advantages of "supra-condyloid amputation" may be classified into those which it has in common with other amputations at and near the knee, and those which are peculiar to itself. Among the former may be mentioned, the stump being more useful for progression, the possibility of bearing pressure on the face of the stump, the patient not being obliged to walk as if he had anchylosis of the hip-joint, the operation being less hazardous than the ordinary flap, or circular amputations of the thigh, from its being further removed from the trunk, the shock being less, there being less chance of protracted suppuration from the anterior flap, consisting for the most part of skin and fasciæ, impossibility of a conical stump resulting, and lastly, diminished liability to the formation of tubular sequestra. The special advantages Mr. Stokes claims for supra-condyloid amputation are those derived from preserving the normal attachments and functions of the quadriceps extensor cruris, the diminished chance of inflammation supervening from

the vessels being divided at right angles to their continuity, and not obliquely, the probable advantages derived from having the cut surface of the femur immediately covered by the patella, and lastly, the diminished chance of purulent absorption from the posterior surface of the anterior flap being lined for the most part by synovial membrane. In truth, "supra-condyloid amputation" possesses all the advantages of both the circular and flap amputations, and the defects of neither.

The strongest testimony Mr. Stokes has yet received as regards the value of the operation has been from Mr. Wheelhouse. He remarks—"I have performed the operation four times, and with invariable success. I consider the method to possess advantages which render it in many cases *decidedly superior to any other system of amputation* of the limb, and which renders its adoption almost, if not quite imperative.

"In no instance, in my hands, has the patella slipped from its position at the end of the sawn femur; in no instance has there been any threatening of the formation of any sequestrum; and in all, a good cushion, covered with well organized skin, and a limb (or rather stump), endowed with rather more than usual freedom of movement has been the result."

Art. 219.—*A Case of Amputation at the Hip.**

By Richard Barwell, F.R.C.S.E., Surgeon to Charing Cross Hospital.

(*The Lancet*, April 5.)

Caroline L——, aged seven, was admitted into Charing Cross Hospital under Mr. Barwell's care September, 1872. She had previously been under the care of Mr. Hancock with severe hip disease, and that surgeon had, in the early part of 1871, excised the head of the bone, but during the operation, the thigh, a mere shell of bone, had broken in two places. She went out after some months with bony union, but with open sinuses. When readmitted at the above date she was emaciated and feeble; there were several open sinuses; the liver was much enlarged. After watching the case for some time, the operation was decided on, and performed by Mr. Barwell on the 2nd November. Hardly any blood was lost; the limb was almost devoid of muscles, the bone carious and inflamed throughout. The child rallied, and after a time (corresponding with the occurrence of smart diarrhœa) the liver began to diminish in size. On the 1st of February the child went out with the liver much smaller. Certain deductions concerning the states of liver in different phases of disease were given.

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* Read at a Meeting of the Royal Medical and Chirurgical Society, March 25th.

Art. 220.—*Intracapsular Impacted Fractures of the Neck of the Femur.*

By R. W. Smith, M.D., F.R.C.S.I.

(*Dublin Journal of Medical Science*, January 7.)

Professor Smith exhibited, April 27th, 1872, to the Dublin Pathological Society, two specimens of fracture of the neck of the femur, intracapsular, and with mutual impaction of the fragments. In one of them solid and complete osseous union had taken place; in the other, consolidation was in progress, but nowhere accomplished completely.

The first specimen shown had been preserved for a great number of years (probably forty) in the Pathological Museum of Trinity College. The history of the injury was unknown, the specimen having, most probably, been found in a subject brought in for anatomical purposes. A vertical section of the bone recently made by Dr. Bennett, rendered it evident that, at some period of the life of the individual, and long before his death, a transverse intracapsular fracture, with impaction had taken place.

The neck of the bone had lost its natural obliquity, being directed horizontally inwards: the head of the femur was approximated behind and inferiorly to the posterior intertrochanteric line, and to the lesser trochanter, so that the cervix had nearly altogether disappeared, except in front, where a projecting osseous ridge, formed by the anterior margin of the upper extremity of the lower fragment, marked the seat of fracture. Posteriorly, the line of fracture was close to the corona of the head of the femur.

A vertical section of the bone disclosed the following appearances: The head and neck had been mutually impacted into each other, the compact tissue of the latter having penetrated the former, while, both above and below, it was itself overlapped by the reticular structure of the head of the femur. Osseous union, solid, immovable, and perfect throughout the whole extent of the fracture, had taken place between the fragments, the cells of which communicated with each other, except where the compact tissue of the lower fragment intervened.

The second specimen had been recently found in a subject brought to the school for dissection, but the history connected with which was equally unknown. In this case the limb was shortened half an inch and the foot everted. Its inversion could not be accomplished beyond such a degree as permitted of the patella being brought to look directly forwards.

Upon examination, the neck of the bone was found to have been broken above its centre, the line of fracture being everywhere within the capsule. The normal obliquity of the cervix was not as much altered as in the first specimen, but owing, most probably, to the eversion of the limb (in this case greater than usual), a considerable interval existed in front between the fragments; this interval had not become filled up. Posteriorly the corona of the head of the bone was closely approximated to the posterior intertrochanteric ridge.

A vertical section of the bone, carried through the head, neck, and greater trochanter, disclosed a fracture with mutual impaction of the fragments. The cellular tissue of the head of the bone had been penetrated both above and below by the compact structure of the cervix, the intervening space being filled up by a projecting portion of the broken surface of the superior fragment. It was here that the process of osseous union had made most progress, but it could not be said to be perfect even here. From the appearance presented in this specimen it is manifest that the injury was of comparatively recent occurrence, and Dr. Smith entertains no doubt but that the case would have terminated in perfect osseous union, had life continued for a few months longer.

ART. 221.—*Anchylosis of the Hip-joint, with Extreme Malposition of the Limb Upwards and Inwards; Subcutaneous Section of the Femur below both Trochanters.*

Under the care of Mr. GANT, at the Royal Free Hospital.

(*The Lancet*, December 21, 1872.)

On Dec. 10th Mr. Gant performed the above operation on a boy, aged six, at the same time remarking that it differed both from Mr. Adams's subcutaneous section of the neck of the femur, and from the American operations between the trochanters of section and excision, by Barton and Sayre.

The reasons which induced Mr. Gant to perform this new operation had, he said, a double foundation. 1. On the pathological ground that the section is not made in a diseased portion of the femur, but in sound and healthy bone. 2. For the anatomical reason that, the section being made below the small trochanter, the resisting psoas and iliacus muscles are set free. Further, that there is no risk of atrophy, or necrosis of the head of the bone, from cutting off of its vascular supply.

If successful, Mr. Gant thinks that this operation will be applicable (instead of excision) to a class of hip-joint cases where the disease is quiescent but the limb useless, the state being simply that of anchylosis with malposition; and especially appropriate in young subjects, where removal of the epiphysial head of the femur might be followed by shortening of the limb.

After section the limb was freely moveable, and was at once brought into a straight position, and kept fixed by means of sandbags, and extension by weight attached to the foot, the counter-extension being made by a perineal band.

Art. 222.—*Amputation through the Metatarsus.*

By G. W. Topping, M.D.

(*Michigan University Medical Journal*, July, 1872.)

Dr. Topping records a case in which this operation was performed. F. J. P., aged eighteen, on Jan. 4th, 1870, by a single blow from an axe, severed the first four toes in a slanting direction, partly through the heads of the metatarsal bones, and partly through the metatarso-phalangeal articulation. The detached portion hung only by a piece of skin an inch in width, and the bones protruded so as to render amputation higher up necessary.

An oval flap was dissected from the dorsum of the foot, the metatarsal bones sawn through their middle, and a large flap taken from the plantar surface by cutting from within outward. Two arteries only required ligatures. The wound healed very quickly, leaving a good sound stump, upon which the patient walks with but a slight limp, and does all kinds of farmwork, such as ploughing, dragging, &c., as well as before the accident, without producing any irritation of the stump. There is no dragging of the stump and consequent liability to ulceration, as is so commonly the case after Chopart's operation.

Mr. Topping is not aware that any writer upon surgery has either recommended or described the above operation. The nearest approach to it is what is known as Hey's, or by some Lisfranc's, operation through the metatarso-tarsal articulation, or, as it was sometimes performed, by sawing off the head of one or more of the metatarsal bones. This (Hey's) operation has seldom been performed, even in cases where it would have sufficed the purpose of amputation.

Art. .223—*Novel Method of Amputation of the Foot for Gangrene.*

By R. W. Smith, M.D., Professor of Surgery in the University of Dublin.

(*Medical Press and Circular*, Feb. 26.)

At the meeting of the Dublin Pathological Society on the 15th Feb., Dr. R. W. Smith exhibited the leg and foot of a man who had been admitted into the Richmond Hospital about ten years ago. He had been working in the country, and a large block of stone had fallen on the anterior part of his foot, injuring the soft parts so severely that gangrene rapidly ensued.

The man came to hospital a weeks after the occurrence, and when gangrene had ceased to spread, and a line of separation had formed, the dead portion was removed by cutting in front of the cuboid and navicular bones, and making a long flap from the sole of the foot. Great difficulty was experienced in healing the stump, and a very long period

of time elapsed before the man was able to return home, and the cicatrix and the ulcer ulcerating and healing frequently.

Four years ago he was again admitted into the hospital, suffering from very extensive ulceration on the dorsum of the foot. At length, after several months he went to the country, and soon afterwards the core healed, and there was no subsequent attack of ulceration.

Last year he again appeared at the hospital, suffering from idiopathic, or Pott's gangrene of the other foot, which terminated fatally after several months' intense and unceasing agony.

The post-mortem examination showed that the ankle joint was perfectly sound. There was no anchylosis between the os calcis and astragalus. The cuboid and navicular bones had been joined to each other, and deeply excavated at their posterior aspects. With regard to the line of operation Dr. Smith had followed, any one who looked at the specimen would see that it was neither Hey's operation, nor Chopart's.

The incision was carried through the median-tarsal range, detaching the fourth and fifth metatarsal bones from the cuboid and the cuneiform bones from the navicular, leaving behind four bones of the tarsus—viz., the os calcis, the astragalus, the cuboid, and navicular. A much longer stump was thus left than after Chopart's operation.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 224.—*On the Position of the Uterus at the End of Pregnancy.*

By Professor WILHELM BRAUNE.

(*Univ. Program, Leipzig*, 1872; *Schmidt's Jahrbücher*, No. 12, 1872.)

The author's investigations were made on two very fresh bodies—one, that of a female, who had died in the last month of pregnancy, the other of a female in whom parturition had already commenced. In neither of these bodies was any sign found indicating that the position of the womb and the surrounding parts had been changed by a previous examination. The liquor amnii was retained even in the second body; and in both cases the membranes were found quite intact in the vagina. By the use of a freezing mixture the bodies were completely hardened, and by frequent renewal of the mixture care was taken to keep the parts in the original position until satisfactory drawings had been taken.

The results obtained from these investigations differ from the reports of other authors. According to Matthews Duncan the pregnant uterus with the ordinary pelvic inclination should form an angle of 30° with the horizon in the standing position, and an angle of between 30° and 60° in the completely recumbent position, which statement presupposed a persistent relation of the uterus to the skeleton, and also a stiffness of this organ with a rectilineal axis. Prof. Braune concluded from his examination of the first body that no rectilineal axis exists in the pregnant uterus before birth. The organ is soft, and at its contours yields to the protrusions and fills up the depressions of surrounding parts. In the second subject, the uterus of which was firmly contracted, there was a well-marked rectilineal axis which formed an angle of 47° with the horizon in the recumbent position of the body.

Prof. Braune next inquired whether the living highly pregnant uterus is before birth soft and flexible, so that the form and position of the organ can undergo changes in the different positions of the body, and according to the positions of the surrounding parts; or, whether its form is unchangeable, the position of the long axis alone changing with the changing positions of the body. Concerning this important question

the author's report differs from the account given by Schultze. According to the latter observer, the diameter from before backwards of the body at the level of the umbilicus is 36, and the distance of the anterior abdominal wall from the lumbar vertebræ 25·5 centimetres. Prof. Braune, on the other hand, states that the depth of the abdominal cavity at the level of the umbilicus in one of his subjects was only 16·7 centimetres, the whole depth of the body being 26·7 centimetres, and in the other subject 20·5 centimetres, with a complete depth of 30·5 centimetres. In both cases the lumbar portion of the vertebral column occupied one-third of the whole depth of the body.

This difference the author attributes to the fact that Prof. Schultze's measurements on living subjects were made with the body erect, whilst those of the author were made on the recumbent cadaver in which the diaphragm was elevated. For the further explanation of this Prof. Braune undertook, in company with Dr. Ahlfeld, a number of measurements bearing upon the form and position of the uterus in advanced pregnancy, in the erect and recumbent positions of the living body. The following is a summary of the results obtained by these investigations:—

1. The uterus of advanced pregnancy presents before birth a mass, soft and changeable in form.

2. In the horizontal dorsal position of the body the uterus lies upon the vertebral column, and increases in its longitudinal diameter.

3. The womb often lies obliquely in this position, as if it had slipped over the convexity of lumbar vertebræ; and, indeed, to a greater extent in those women who have gone through previous pregnancies, and consequently have lax abdominal walls, than in women in their first pregnancy, and with tense abdominal walls.

4. In the erect position of the body the uterus is supported on the anterior abdominal wall. When the uterus projects forwards the depth of the body is increased; at the same time, however, the circumference of the body is increased at this height.

5. The position of the uterus and its form, therefore, always vary according to the position of the body.

6. The spinous process of the last lumbar vertebra almost always lies on a level with the greatest prominence of the abdomen.

Art. 225.—*On Turning with Contracted Pelvis.*

By Dr. Borinsky.

(*Archiv für Gynäkologie*, iv., 1872; *Schmidt's Jahrbücher*, No. 1, 1873.)

Opinions concerning the value of turning as an operation for preventing the dangers attendant upon the head presentation in a narrow pelvis still differ. Though isolated cases will always require their special treatment, yet may this question be decided by the results of a sufficiently large number of observations from one and the same source, and of a sufficient list of cases treated on the same principles, and in which similar operative proceedings were used. With this object in view the author has collected all the cases of turning with contracted pelvis that occurred in Prof. Spiegelberg's hospital practice from 1865 to 1872.

Turning was performed in consequence of narrow pelvis in 93 cases. The infant was extracted in all but 2 cases of these. Of the children 34 lived, 39 died during or soon after birth, and 20 were dead before birth. In addition to the turning, perforation was practised in 9 cases: extraction of the head with a hook in 1 case, and extraction with forceps in 2 cases. Of the mothers 15 died soon after delivery, generally from morbid conditions unconnected with the turning; in 3 cases, however, death was the result of very difficult extraction. According to the indications the cases of turning may be divided as follows, in regard to the passage of the fœtus:—1. Simple head presentation, 16 cases; of these, 7 children living, 9 dead. 2. Head presentations with complications, 36 cases: 15 children living, 14 dying in the course of, and 7 dead before parturition. 3. Transverse and oblique positions of fœtus, 41 cases: 12 children living, 16 dying in course of, and 13 dead before birth. The pelvis was:—1. Flattened in 74 cases; in 29 of these the child was born living; in 29 cases it died during birth; and in 16 before birth. 2. A generally and equably contracted pelvis, 4 cases: 2 children born living; 1 child dying during birth; and the fourth dead before birth. 3. A funnel-shaped and contracted pelvis: 1 case, in which the fœtus died before parturition. 4. A flattened and also narrow pelvis, 9 cases: 1 child living, 7 dying during, and 1 dead after birth. 5. Asymmetrical pelvis, 5 cases: 2 children living, 2 dying during, and 1 before birth. In 15 births with breech presentation, 8 children were born alive; 5 died during, or shortly after birth; and 2 died before birth; 1 mother died from endometritis.

With regard to the influence exercised by the many complications on the course and termination of parturition, the author remarks that it is indeed self-evident that prolapse of the umbilical cord, or an oblique position of the fœtus, reduces the chances, but when at the commencement an unimpaired fœtal pulse can be made out, the successful termination of the labour depends upon the course of the operation. Irremovable prolapse of the umbilical cord indicated turning in eighteen instances, in thirteen of which the result was favourable, five children only dying during a laborious extraction. The author has arranged in a table the births in which the head presented, with those terminating spontaneously and those submitted to operation, and has compared with these the births in which turning with a head to a foot presentation had been practised. He shows that about 53 per cent. of the fœtuses died during or after the turning, while not more than 30 per cent. died after all other methods of parturition. It remains certain, therefore, that one, in order to preserve the fœtus, should never have recourse to turning as a prophylactic measure, and that to justify this proceeding a decided and prominent danger must be present. The generally contracted pelvis in all its varieties is the least indicative of turning, the most unfavourable results being given in cases of straightened and generally contracted pelvis. On the other hand, the pelvis contracted only in the conjugates affords the relatively best prognosis; if, however, the conjugates be under eight centimetres, the conditions are then analogous to those of general contraction. With regard to the asymmetrical pelvis, it is also certain that on account of the small dimensions of the sacro-cotyloid distance on the contracted side, the portion of the pelvis which

lies behind and without this is to be regarded as non-existent for the passage of the head, and that therefore the long oblique diameter does not contribute to the furtherance of parturition.

With abnormal deviation of the head towards the anterior or posterior wall of the pelvis, the so-called *posterior* or *anterior* parietal presentation, delay is dangerous. The former position of the head, dependent on a high steep anterior wall of the pelvis, is not only a great obstruction to the course of the labour, but is, moreover, fraught with dangerous results to the mother. Whilst the flat posterior portion of the parietal is forced deeper into the pelvis, the anterior portion may be held back by the steep anterior pelvic wall; before it can pass, which it seldom does, this portion of the bone must be subjected to crushing force, to the detriment of the mother. The best means of altering this position is to turn, exception being made, though, of cases of generally contracted pelvis. Less dangerous is the anterior parietal presentation, in which a high-standing promontory, generally associated with a flattened anterior pelvic wall, holds back the head bent towards the trunk at an angle open posteriorly, so that the exploring finger feels the anterior portion of the parietal bone closely applied to the pelvis. In instances of long continuance of this condition it becomes necessary to have recourse to turning, in order to remove the persistent partial pressure and to bring on delivery. Though Schröder holds it as rational to turn the child at once in cases of frontal and facial presentation, and also of prolapse of small structures, such as the umbilical cord, Spiegelberg's notes show eight cases, in each of which, with narrow maternal pelvis, the child came alive into the world after reposition of the umbilical cord. Of no greater importance is the indication derived from face presentation.

Art. 226.—*On the Diagnosis of Extra Uterine Pregnancy.**

By Lawson Tait, F.R.C.S.

(*Medical Times and Gazette*, May 24.)

The author thought that in these cases very little confidence should be placed in the statements of patients if they were not in harmony with physical signs. He had, in consequence of the history of her case given by a patient, been led to make an erroneous diagnosis, mistaking a multilocular ovarian tumour for a case of extra-uterine fœtation. There were two circumstances which invariably accompanied extra-uterine gestation which has gone past the period:—The first was due to the general excitement and congestion of the organs involved, especially to the enlargement of the uterus; and the second to the absorption of the liquor amnii after the death of the child. The conditions with which extra-uterine pregnancy may be confused before the death of the child were displacement of the normally pregnant uterus during the early months, pregnancy complicated with fibro-myoma or cystic disease of the uterus, and more rarely pregnancy of one-half of a double uterus. After the death of the child diagnosis was more difficult. The two points in the history

* Read at a Meeting of the Obstetrical Society of London, May 24th.

already mentioned were most important; auscultatory signs were of no use. The other conditions with which it might be confused were pelvic hæmatocele, ovarian tumours, especially dermoid cysts, cancer, fibro-cystic disease of the uterus, hydatids of the uterus, and phantom pregnancy. The uterus in extra-uterine pregnancy was always intimately associated with a tumour, and generally in front of it, moveable to a limited extent, and enlarged. The most important point was that the cervix is always patulous. Under such circumstances, if a fœtal heart were audible, the case was clear. If the case were seen after the death of the child the tumour would be soft, and, besides obscure *ballottement*, possibly a part of the child might be made out by internal or external examination. Of the three cases which the author had seen two had been first pregnancies, and in neither had there been any troublesome pain. In the third there was great pain, but the patient was seen during the false labour.

Art. 227.—*Report of a Case of Gastrotomy for Supposed Extra-Uterine Gestation.**

By Alfred Meadows, M.D.

(*Medical Times and Gazette*, May 24.)

The patient, aged fifty-eight, was admitted to the Hospital for Women, and had passed through the climacteric period nine years ago. She had great pain in the abdomen, which was enlarged by the presence of a tumour. Sixteen years since she fancied herself pregnant, and in due time had pains like those she had felt in her first confinement; these, however, gradually declined, and no child was born, and since that time she had considered herself to be carrying a dead child. On admission, the abdomen was found to be occupied by a large tumour about the size of the uterus at term, tender to the touch, and apparently solid. The uterus was high up, and its cervix very small. The sound passed upwards and forwards two and a half inches. The balance of opinion among the author's colleagues being that this was a case of extra-gestation, it was determined to clear up all doubts upon the matter by making an exploratory incision five inches in length between the pubis and umbilicus. A white friable mass was then discovered, having all the characters of malignant disease. It broke down readily, and two ounces of a thick brownish fluid escaped. Finding it impossible to remove the mass, the abdominal wound was closed. Fifty-three hours after the operation the patient died, and upon opening the abdomen the mass of malignant disease was found to be the omentum, which overlapped the tumour, and was about an inch in thickness. The tumour itself, which was adherent in every direction, proved to be a large fibro-cystic tumour of the uterus. The author cited this case to show the difficulty of diagnosing abdominal tumours. Even with the aid of an exploratory incision, a correct diagnosis of the character of the tumour had not been arrived at previous to death. He believed it to be the moral duty of every one to record his failures as well as his successes.

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* Read at a Meeting of the Obstetrical Society of London, May 24th.

Art. 228.—*On a Case of Extra-Uterine Fœtation, with Operation.**

By John Scott, F.R.C.S.

(*Medical Times and Gazette*, May 24.)

The patient, aged thirty-two, was admitted into the Hospital for Women complaining of pain in the right inguinal region. The uterus was found developed as in early pregnancy. This was April 17th. On May 15th a tumour could be distinctly felt above the pubes. June 5th: The os could scarcely be reached, and the tumour felt more elastic. August 7th: A feeling was communicated to the finger as if of fluid between it and the uterus; the fœtal heart could be heard. January 6th: The tumour extended two inches above the umbilicus, and felt per vaginam like the tense bag of membranes. No fœtal heart could be heard, and a hard body like the uterus was felt in front of the abdominal tumour. January 15th: The sound passed four inches, its point being felt in the body just mentioned. On the 29th sudden and violent pains in the epigastrium came on, with restlessness, faintness, and sickness. The cyst was punctured by the aspirator, but no fluid could be withdrawn. On the 30th, in consequence of threatening symptoms, it was decided to make a free incision through the abdominal walls, when what appeared to be the enlarged uterus presented itself, but on extending the incision upwards it proved to be an expansion of the uterine tissues. This was cut through, and on passing the hand into the cyst the fœtus was found lying with its head in the upper part. It was removed, the cavity sponged out, and the placenta left untouched. The upper part of the incision was closed by sutures, and the lower left open, the whole being dressed with carbolized oil. The patient died thirty-one hours after the operation. The author gave a minute report of the cyst and its appendages made by Dr. Snow Beck.

Art. 229.—*On a Case of Extra-Uterine Pregnancy.**

By William Ross Jordan, M.R.C.S.

(*Medical Times and Gazette*, May 24.)

The woman, aged twenty-nine, was a patient in the Birmingham Hospital for Women. In April 1872 she had inflammation of the bowels, which threatened her life. In July or August she first felt the child, and in September she expected and prepared for her confinement. From this time she gradually became smaller in size for six weeks, when she fancied she was in labour, being in great pain for three or four days. After that she had frequent shivers and a cold sensation in the abdomen. On December 13th a swelling in the abdomen, not larger than in ordinary pregnancy at six months, was discovered fluctuating a little towards the left side, and on deeper

* Read at a Meeting of the Obstetrical Society of London, May 24th.

examination a round mass like the placenta between the umbilicus and pubes, and a harder projection to the upper and left border of the tumour. The cervix uteri was pushed up to the right side. The sound, penetrating three inches and a half, pointed to the right groin, and moved the round body felt in the abdominal examination. The recto-vaginal pouch was occupied by a hard, rounded mass. On December 21st a puncture with the aspirator was decided upon, and a quantity of chocolate-coloured fluid mixed with white flakes was drawn off. Mr. Ross Jordan, from his examination on this occasion, came to the conclusion that the case was one of extra-uterine fœtation. Two hours afterwards complete collapse came on, and hæmorrhage into the cyst or abdomen was suspected. Five hours after the use of the aspirator an incision four inches long was made in the abdominal wall down to the peritoneum, when the cyst with the placenta under it presented. A clot of blood having been removed, the cyst, with a foot near the external opening, was drawn forward, but the wall of the cyst being thin it ruptured, and through this opening the fœtus was extracted. The placenta was left undisturbed, and the openings of the cyst and the abdominal wall were brought together by sutures of carbolized catgut, leaving an open wound about two inches and a half long, which was covered with a layer of tenax, &c. The patient progressed favourably, and on January 1st two large fragments of placenta were discharged, and on April 10th she came to the hospital looking well, with the wound quite healed.

Art. 230.—*On the Excessive Vomiting of Pregnancy.*

By Alfred H. McClintock, M.D.

(*Medical Press and Circular*, April 30).

At a meeting of the Dublin Obstetrical Society Dr. McClintock read a communication on the Excessive Vomiting of Pregnancy, under which title he included all cases where this symptom of the gravid state is so severe and persistent as to threaten the life of the patient. He advocated a resort to the induction of abortion in all these cases, if medical treatment be found unavailing, and the life of the patient endangered. A highly illustrative case was related, where the author recently had recourse to induction—apparently under hopeless circumstances—and saved the patient from inevitable destruction. He took a brief clinical retrospect of the subject, and a list was given of thirty-six cases where abortion had been purposely brought on to rescue the patients from the fatal effects of this excessive vomiting. In twenty-seven of these cases the vomiting was arrested and the patients perfectly recovered; whilst in nine instances, although the vomiting was stopped, still ultimate recovery did not take place, partly in consequence of the operation having been too long delayed, and partly from the intervention of some complication (*e.g.*, diarrhœa, hæmorrhage, puerperal fever, biliary calculus, &c.) not fairly ascribable to the operation itself. The author cited fifty cases (from various authentic sources) where death

had actually taken place from the persistence and uncontrollable severity of the sickness. With reference to the etiology of the symptom, he briefly adverted to each of the theories that had been put forward to account for its production, and showed their inapplicability to the great majority of cases; and he completely refuted the notion (so strongly cherished by Dr. Graily Hewitt) that some displacement of the gravid uterus was the cause of the vomiting in every instance. He was at pains to distinguish between the vomiting that occurred *in* pregnancy (from some concurrent disease), and the true vomiting *of* pregnancy; and whilst enforcing extreme caution in the former class of cases, before any recourse be had to artificial abortion, still he thought that this alternative measure might be justifiable in some cases of this description, and referred to instances in his table, in support of the opinion.

ART. 231.—*On the Systematic Examination of the Abdomen, with a view to Rectifying Malpositions of the Fœtus during Labour.**

By ARTHUR EDIS, M.D., M.R.C.P.

(*Medical Times and Gazette*, January 11.)

In bringing the subject prominently before the Society, it was not so much with the idea of advancing any novel mode of procedure as of inculcating more earnestly the universal adoption of this simple expedient, which, Dr. Edis felt, would tend materially to diminish the large mortality annually occurring in Great Britain from accidents of childbirth. It might well be advocated by our systematic authors and clinical teachers, and every student should be taught to consider it his duty, to examine carefully the position of the fœtus in utero on first visiting his patient in labour. Dr. Barnes, in his "Lectures," states:—"A head presentation is the type of natural labour; it follows that to obtain a head presentation is the great end to be contemplated by art; yet delivery by the feet is almost invariably practised when turning has to be accomplished. Why is this? The answer is not entirely satisfactory. It rests chiefly on the undoubted fact that in the great majority of instances, at the time when a malpresentation comes before us, demanding skilled assistance, turning by the feet is the only mode of turning which is practicable." The patient herself often in transverse presentations notices that she has carried this child differently from the others, and yet the attendant fails to utilize the hint until too late. The process of external version Dr. Edis described as very simple. With the patient on her back and the knees drawn up, a little experience will soon enable the practitioner to detect the position of the fœtus; and by turning the patient on her side, and making pressure and counter-pressure on the head and breech, rectification of any abnormal position may readily be accomplished. He quoted from Dr. Richardson's pam-

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* Read before the Obstetrical Society of London, Dec. 4th, 1872.)

phlet the chief advantages to be derived from the practice. The diagnosis of the fœtal position can readily be accomplished before the membranes are ruptured, and the examination thus conducted can be made with less discomfort to the patient and less trouble to the physician than attend a vaginal examination. As regards the treatment of obstetric cases, version can be performed before labour begins, and it can also be performed during labour with much less danger to the mother and the child than is possible by any other method. Cephalic version can by this method be performed as easily as either podalic or pelvic version. In cases of placenta prævia we can interfere at a very early stage of the labour, and in cases of prolapsed funis we can terminate labour earlier than if we were obliged to wait until the os uteri was dilated enough to introduce the hand. The same advantage is also evident in cases of accidental hæmorrhage and of convulsions.

Art. 232.—*On the Causation of Acquired Flexions of the Uterus and their Pathology.**

By Charles Squarey, M.D.

(*Medical Times and Gazette*, Jan 11.)

The author's object in the paper was to explain why, in two cases, the same causes and conditions apparently existing, an anteflexion is found in the one case, a retroflexion in the other. Having shortly noticed the anatomical relations of the uterus, the author called special attention to the rising and falling of the uterus in the pelvis in different positions of the body, and to the alteration in the direction of the axis as it so rose and fell, pointing out that in whatever plane of the pelvis the uterus might be situated, its axis was invariably at right angles to that plane; and he showed (referring to drawings) that the axis of the uterus varied considerably in these different positions, looking when low down almost in an opposite direction to what it did when high up, and consequently that the direction the fundus uteri took in a flexion depended entirely on the situation of the uterus in the pelvis at the time that the cause producing it came into action. Thus, when an anteflexion is produced, the uterus is situated high up in the pelvis, occupying its normal position, the axis being forwards, so that any force striking it from above would impinge on the posterior and upper surface of the fundus, and so force it forward and produce anteflexion; that when a retroflexion is produced the uterus has from some cause sunk more or less deeply in the pelvis, and has its axis directed more or less backward, so that any force striking it from above would impinge on the anterior and upper surface of the fundus. As a proof of the correctness of this view, reference was made to the predisposing and exciting causes of flexion, as described by Dr. Graily Hewitt. Anteflexion is found to be much more common in young adults and in the virgin state, while retroflexion is much more common in older women and in women who have borne children. Again, when retro-

* Read before the Obstetrical Society of London, December 4th, 1872.

flexion exists in virgins, there is almost invariably a history of depressed general health, and there exists relaxation of all the tissues. In speaking of the pathology of flexions, he specially referred to those cases in which a sudden strain causes a flexion. What, in such cases, keeps the uterus in its flexed position? When retroflected, the pressure of the intestines explains it; but this does not apply to anteflexion. The author believed it to be due to loss of tone of the uterine tissue, the loss of tone being due to some bruising of the uterine fibre, with some slight effusion of blood into its tissue.

Art. 233.—*On the Production of Presentations of the Face.*

By J. Matthews Duncan, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo. pp. 445, 1872.)

Dr. Duncan aims to prove that this form of presentation does not result from impinging of the occiput upon, and arrest of progress by, the pelvic brim. He remarks: "It appears to me to be highly probable that the chief cause of face cases, is obliquity of the uterus in any direction, insuring a curvature of the genital canal at the brim of the pelvis; that this cause operates when the forehead of the child is placed near the concavity of the curved canal, or nearest the line of the propelling force; and that the *dolicocephalous* form [of the fœtal head] will greatly favour the transformation under these circumstances of a vertex into a face case."

Art. 234.—*On the Influence exerted by Chloral on the Pain of Parturition.*

By E. Lambert, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo, pp. 445, 1872.)

Dr. Lambert records eleven parturient cases in which the hydrate of chloral was freely used. He remarks of this remedy, "As the hypnotic of the first stage, chloral stands unrivalled; we have only to remember that opium, our only sure refuge, must be administered with the knowledge that we are conspiring, though for a higher end, against the course of labour." We give a general summary of the cases to show the effects produced.

1. Age, twenty-five; second pregnancy; chloral could not be retained more than a few minutes, either by the stomach or rectum.

2. Age, twenty-two; primipara; slept between pains; sometimes answered questions when apparently unconscious; appeared to know when the head was delivered, but when awake five hours afterward, seemed to have forgotten all about it.

3. Age, twenty-six; primipara; slept in intervals; pains not very severe; not fully conscious more than two-thirds of the duration of each; said that she experienced great relief.

4. Age, forty; tenth pregnancy; pains scarcely at all alleviated; felt very dizzy after second dose; slept well after delivery.

5. Age, eighteen; primipara; two doses of ʒj each; slight delirium; very little exhibition of pain.

6. Age, thirty-four; eighth pregnancy; twin birth; chloral with second; vomited frequently; dead fœtus delivered with forceps under chloroform.

7. Age, nineteen; primipara; fœtus 6½ months; ergot ʒj, and chloral ʒj, given conjointly; appeared to neutralize each other.

8. Age, twenty-seven; second pregnancy; ergot and chloral as in the last case; marked cerebral disturbance; no relief from suffering; breech presentation; child dead.

9. Primipara; anæsthesia complete for about half an hour.

10. Age, twenty-four; second pregnancy; made no complaint at the passage of the head, and remained unconscious about forty minutes afterwards; then became somewhat delirious and talked a great deal until she fell asleep.

11. Age, twenty-three; primipara; condition of perfect quiet; pupils rather large, but perfectly contractile; labour arrested with the os fully dilated; no contractions for some five hours; forceps used under chloroform.

Dr. Lambert regards chloral as "an agent of great value in the relief of pain during parturition." He recommends that it should be administered in doses of 15 grains every quarter of an hour until some effect is produced. Some patients, he says, will require drachm doses, and it is better to produce an anæsthetic effect by ʒiij, given in the space of two hours, than ʒj given singly. He believes the remedy to be chiefly adapted to the first stage of labour for the relief of pain from uterine contraction, although it has been proved to produce anæsthesia throughout labour, under favourable circumstances.

Art. 235.—*Mechanism of the Expulsion of the Placenta.*

By William Lyon, M.R.C.S.

(*British Medical Journal*, Dec. 14, 1872.)

Mr. Lyon states that he has been unable to learn anything on this subject from books, but that from careful observation he is satisfied nature observes a particular form in the expulsion of the placenta. In most cases of detached placenta where undue interference has not been practised, he adds, its lower part will be found lying in the cavity of the pelvis, and its upper more or less above the brim. When the uterus contracts, the placenta is folded upon itself, with sometimes the uterine and sometimes the fœtal surface in contact, and the folds always longitudinal or in the direction of the length of the passages. The double mass is then expelled with its two edges foremost, and the part which first passes the os vaginæ is the point where the two edges meet in forming the double.

The mechanism displayed in this process must convince every one of the propriety of withholding all interference, "except what may contribute to uterine contraction—the only admissible moving power. The adaptation of the mass to the shape of the passages, and its consequent

facility of egress, will be more apparent if we contrast the case with one in which the protrusion is effected by pulling the cord. Under such circumstances, the placenta is brought through the passages in the form most certain to offer resistance, and is protruded like a plug. The irritation caused by this treatment may raise a pain, which may assist in its expulsion; but it is remarkable how much force is often required to effect that purpose, if the placenta be of large size. Cases may occur, however, which may seem to contradict my statement. We may sometimes feel the placenta advancing in the form of a smooth ball, by purely uterine effort; and may be unable to detect the edge of the mass; but, on particular examination, we find that the insertion of the cord is up in the cavity of the uterus, and that the membranes are still adhering to the edge of the placenta. The situation of the insertion of the cord proves that the presenting part must be the edge of the placenta; and, if we wish for further proof, it will be obtained by tearing the membranes with our finger-nail, and converting the case into an ordinary natural one. If the expulsion take place before we can accomplish that, as is sometimes the case when the membranes are strong, we can take the most prominent between our finger and thumb, and retain our hold till it is completely protruded, when we will be quite sure. We find also, in cases in which the whole mass is brought into the pelvis by traction of the cord, that it will be expelled, if left to uterine contraction, in the regular way, and not otherwise; whereas, if the traction be continued till the completion of the process, the part which is first protruded is that into which the cord is inserted. Under the same circumstances, also, if it be necessary to help the pains, we effect our purpose most easily by reaching the edge of the placenta with our finger, and using a little pressure on it, so as to form a natural folding. It will then be in the most favourable position for being expelled, whether it be left to the action of the uterus, or assisted by pulling the cord.

"We must look on this subject as something more than mere matter of curiosity, because it affects the management of the placenta—a very important part of labour. The temptation to pull the cord, both when there are no pains, and when they are not sufficiently strong, is the cause of much rough treatment; and such conduct can only be defended on the ground that it tends to insure contraction of the uterus. But surely such a state is more certain and less painful when induced by the natural effort, or by manipulation of the uterus in the abdomen."

Art. 236.—*Hydrate of Chloral in Puerperal Convulsions.*

By Alexander Milne, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo, pp. 445, 1872.)

A woman in labour with her fourth child, and progressing towards conclusion, was frightened by the noise of a falling body, and went into a convulsion. The child was born, and uterine action finally terminated, but still the fits continued at short intervals. Sixty grains of the remedy were given, and no cessation of eclampsia took place, until about fifty

minutes were passed, when the patient fell into a heavy sleep which lasted eight hours. She awakened confused, but free from headache or sickness, and made a good recovery.

Sir James Y. Simpson believed that this was the first case of puerperal convulsions in which hydrate of chloral had been employed.

Art. 237.—*Case of Puerperal Tetanus.*

By W. Craig, M.B.

(*Transactions of the Edinburgh Obstetrical Society.* 8vo, pp. 455, 1872.)

The subject of this rare disease was aged thirty-seven. She had previously given birth to seven children; and made good recoveries after each labour. Her eighth child was delivered by a midwife, who failed to remove the placenta, which was retained by inertia of the uterus. This occasioned violent hæmorrhage, and Dr. Craig was called in. Case made fair progress until the ninth day, when tetanus set in; with opisthotonos on the tenth, and the woman died in forty hours. She was treated with tincture of Indian hemp.

From the discussion which followed the reading of Dr. Craig's paper, it would appear that puerperal tetanus, especially at full term, as in this case, is exceedingly rare in this country. Like traumatic tetanus, it is much more prevalent in the torrid than the temperate zone.

Art. 238.—*Remarks on Pelvic Peritonitis and Pelvic Cellulitis, with Illustrative Cases.*

By Lauchlan Aitken, M.D.

(*Transactions of the Edinburgh Obstetrical Society*, 8vo. pp. 455, 1872.)

It will be seen by the title of this paper that Dr. Aitken adheres to the old phraseology, instead of adopting the *Perimetritis* and *Parametritis* of Dr. Matthews Duncan, believing it much less confusing than the latter. He remarks: "The terms show to any one at a glance the nature of the affection, whether it is inflammation in the cellular tissue, or serous membrane of the pelvis, and do not limit the seat of the disease to the immediate neighbourhood of the uterus, as I maintain the words perimetritis and parametritis must do."

With regard to the traumatic origin of pelvic peritonitis, the author says:—

"Among determining causes of the traumatic variety I may mention the use of the tangle-tents to dilate the cervix, ... cutting operations on the uterus, the excision of polypi, the application of solid nitrate of silver to the interior of the womb, or of caustic potash to the cervix, and the wearing an intra-uterine pessary, which have all proved the exciting causes of such cases; and among others which have been mentioned, and which we can readily conceive may have produced the inflammation, we find recorded venereal excesses, injections of fluid into the uterine cavity, and chancres on the cervix."

With regard to the differential diagnosis between affections of the serous membrane and cellular tissue of the pelvis, Dr. Aitken remarks :—

"It is to the physical signs we must chiefly trust to guide us correctly; and certainly I can confidently say, that there are few more difficult points in physical diagnosis than this, the difficulty being in many cases greatly increased by the fact, that unless under chloroform, the combined internal and external manipulations necessary to satisfy us, is usually at first too painful for the patient." He does not agree in opinion with Dr. Gaillard Thomas, of New York, as given in his work on the Diseases of Women, and says that, "in some cases, his statements would answer for both complaints, while in many others, they might be reversed without impropriety.

"In by far the greater majority of cases of pelvic cellulitis, we find on internal examination, that the induration, or swelling, is on one or other side of the uterus, and that it is only very rarely that the whole roof of the pelvis seems blocked up by the hard, stony mass, so common in cases of pelvic peritonitis. The tumour in most cases of cellulitis is found principally in one or other of the iliac fossæ, and apparently closely connected to the iliac bones, or, if it has not advanced so far, to the pubes; while the tumour, if felt at all through the abdominal walls in peritonitis, is usually more in the mesial line, or if situated laterally, does not by any means seem so intimately blended with the bones. An important point of the diagnosis of pelvic cellulitis, as well as of pelvic peritonitis, is the immobility or fixation of the uterus—an immobility which, in many cases of peritonitis when it is fixed all round, may be said to be absolute, while in cellulitis it rarely if ever happens that the fixation is so complete. . . . . In cellulitis the uterus is usually pushed to the opposite side of the pelvis from that occupied by the phlegmon, whereas in some cases of peritonitis, the body and fundus of the womb are so completely lost or enveloped amidst the exudation, that it is only by the use of the sound, when such a use is justifiable, that we can determine its exact position in the pelvis." (p. 100.)

As a means of depletion in these affections, Dr. Aitken prefers leeches around the anus, to applying them through a speculum, to the cervix, objecting to the use of this instrument on account of the hot and irritable condition of the vagina. He recommends greater depletion in the former than latter of the two diseases; and, to relieve the suffering of either, but particularly the peritonitis, has greater faith in opium than any other anodyne, using it chiefly by suppository and hypodermic injection, in the latter case employing the bi-meconate of morphia, gradually increased from quarter-grain to a grain, or more, twice a day. To allay vomiting he uses ice, dilute hydrocyanic acid, bismuth, oxalate of cerium, charcoal, cherry-laurel water, lime-water, blisters, opium, and the spinal ice-bag. He quotes from Bernutz, who very highly recommends conium, as a narcotic to the genital organs, given in full doses, so as "to produce slight derangement and a kind of hallucination."

Art. 239.—*On Vaginal and Uterine Prolapses.*

By Professor E. Martin.

(*Berliner Klinische Wochenschrift*, 30, 1872; *Schmidt's Jahrbücher*, No. 1, 1873.)

It is very necessary to distinguish the uterine prolapse which depends on sinking of the whole organ, from the apparent prolapse due to elongation of the neck of the uterus, especially the vaginal portion, although, indeed, these two conditions may occasionally be associated. Simple prolapse of the uterus occurs less frequently than prolapse of the womb and vagina. It has been denied by Hohl that the uterus is supported by the vagina; the special supports of the uterus are the sacro-uterine and pubo-vesico-uterine ligaments, which contain abundant muscular fibre; the broad and round uterine ligaments, on account of their position and laxness, are not fitted for supporting the uterus when the subject is in the erect position.

The most frequent form of prolapse is undoubtedly a result of a persistent depression of the anterior wall of the vagina, caused through swelling during pregnancy. This first appears in the vaginal entrance, or in front of this, as an oblique folded tumour; there is commonly found, in addition to this, an elongation of the neck of the womb, as a consequence of imperfect retrogressive changes; the further development of the anterior vaginal prolapse may be associated with the formation of a cystocele. With this first form of prolapse, the elongation of the cervix uteri affects most frequently the supra-vaginal portion; this elongation is sometimes wanting, whilst in the course of time, through dragging of the sacro-uterine ligaments, it may attain a true sinking of the whole uterus; so that, although this occurs very rarely, even the fundus of the uterus may be felt through the vaginal walls in front of the entrance to the vagina. This seems to occur especially when this form is associated with retroflexion or retroversion of the uterus.

Of less frequent occurrence is the second form of prolapse—namely, prolapse of the posterior vaginal wall, through shrinking of a cicatrix of the perineum and inferior portion of the posterior wall of the vagina, also as a result of perineal laceration leaving the rectum intact. Here the uterus may remain in its usual position or may be depressed in association with an anterior vaginal prolapse. The perineum and posterior wall of the vagina afford no kind of defence against prolapse of the womb and anterior portion of vagina; and even when there has been deep laceration of the perineum, with destruction of the lower end of the recto-vaginal septum, vaginal and uterine prolapses rarely occur. On the other hand, prolapse of the lower portion of the posterior vaginal wall is frequently associated with rectocele. This form of prolapse may occur as well alone as also in association with the first or third form. Sinking of the posterior portion of the vagina is of very rare occurrence as a primary condition, although it is frequently met with in cases of long-standing prolapse. The third form of prolapse is originally observed partly with well-marked retro-flexion of the womb, partly with ascites or with adherent ovarian tumours and other morbid growths in the pelvis. The space of Douglas then seems to be unusually deep, and

forms a pocket over the posterior part of the vagina, into which a loop of intestine may slip and thus constitute, as hernia vaginalis posterior, a dangerous complication of parturition. With this prolapse of the vagina, the womb is gradually dragged downwards; more frequently, however, the uterine prolapse precedes.

A fourth form of uterine prolapse depends upon an exclusive elongation of the vaginal portion which protrudes as a cone-shaped body. This may occur in children, tall girls, and pregnant women; it is frequently a result of inflammation of the vaginal portion, particularly the inflammation caused by gonorrhœal infection; whether it can be produced through mechanical irritation has still to be made out. Sometimes the mucous membrane and submucous layer of the cervix uteri is so swollen and hypertrophied that they protrude from the os; if the os be compressed laterally an ectropion-like protrusion of the lips is produced, when this is not the case one meets with the so-called penile elongation with external protrusion of the mucous membrane of the canal.

With regard to etiology it seems questionable whether there be general disposition to prolapse, as for instance, through laxness of the tissues. The most frequent cause is want of care during the lying-in. A case of prolapse from simple senile shrinking of the tissues has never been observed by Professor Martin. The symptoms of genital prolapse vary according to the degree and the duration of the affection, and also according to the existence or absence of complications with lesions of the rectum and bladder and with inflammation and ulceration. The diagnosis cannot always be easily determined; digital examination is often insufficient, and it becomes necessary to use the uterine sound; the relation of the urinary bladder and the rectum to the prolapse should always be inquired into. Only in rare cases does a prolapse disappear spontaneously, especially when inflammatory lesions are present. An old prolapse may disappear during pregnancy, and also on the elevation of an ovarian cyst adhering to the uterus. The prolapsed portions are much exposed to injury during parturition. As prophylactic measures, lying-in women should be forbidden to exert themselves and to get about too early; besides all conditions are to be avoided which may prevent the proper retrogressive changes in the internal genitals.

The treatment is usually commenced by returning the prolapsed portions; this, however, is a proceeding not always free from danger, especially when the uterus has been fixed by inflammatory adhesions or encapsuled exudations; one should therefore in all cases where signs are present of inflammation in the neighbourhood of the uterus, postpone all attempts at reposition until the inflammation has quite ceased, the patient in the meantime being kept in the horizontal position and treated by local applications of lead lotion or of a solution of sulphate of copper. The smaller ulcerations generally heal after reposition, an attempt at radical cure through medicinal treatment seldom succeeds. The old operations also, such as episiorrhaphy, kolpodesmorrhaphy seldom lead to a permanent good result. The removal of an elongated vaginal portion seems to be perfectly justifiable when the elongation is of long standing, but still when a prolapse of the anterior wall of the vagina exists, the shortening obtained by an operation is only temporary. The proceedings of Sims, Emmet, and Simon consist really in the formation of a pouch,

in which the vaginal portion can be well retained, and which serves to hinder further sinking. With the proceeding of Sims and Emmet retroversion is produced, and with that of Simon anteversion of the uterus. With the elongation of the female genitals described as the first form of prolapse, Sims's method can have no permanent results, because the anterior wall of the vagina also has lost its support, and has generally fallen together with the urinary bladder. With exclusive prolapse of the lower portion of the posterior wall of the vagina, the excision of a sufficiently large fold from the protruded parts will have a satisfactory result, provided a rectocele has not already been superadded. In cases of prolapse dependent on dilatation or depression of the space of Douglas, no good results are to be expected from any operation on the vagina. Under such conditions the treatment is often limited to the use of a pessary. With the first described and most frequent form of vaginal and uterine prolapse a stalked pessary answers excellently. Cleansing injections of aqua picea or of aqua creasoti are indispensable, and after six months the pessary ought to be renewed. In the rare cases where reposition is impossible in consequence of adhesions, all that can be done is to recommend a T-bandage carrying a pad provided with a caoutchouc sac.

Art. 240.—*On Rheumatoid Manifestations of the Puerperal Condition, and of Infectious Puerperism.*

By M. Quinquad.

(*Gazette Médicale de Paris,* Nos. 41, 45, 47, 52, 1872.)

Symptoms.—Several days after delivery, the woman becomes slightly feverish and remains so for a long period, in the course of which various phlegmasiæ are manifested. One of these is arthritis. This affection generally commences insidiously and at first often escapes notice.

In some cases, however, the disease commences as an acute puerperism and is accompanied by different lesions, as metritis, angeioleucitis, peritonitis. As the febrile phenomena become less severe morbid changes are observed in the joints.

The patient complains of articular pains often localized in one joint, generally the knee.

The joints swell and become painful on pressure. Movements can scarcely be made and the limb remains immovable in a position of demi-flexion.

The surface of the swollen joint is of rosy red colour.

The presence of a more or less abundant effusion may be distinctly made out; and, if a puncture be made, a very fetid purulent fluid may be removed.

The parts around the affected joints are inflamed and indurated, a condition seldom met with save in purulent arthritis.

The effusion may be gradually absorbed when treated by blisters or compression. It generally takes several months for the joint to regain its normal condition.

Inflammatory thickening and stiffness exist for a long time, and also

tenderness of the joint when passive movements are made. There is, in all cases of this kind, a great tendency to anchylosis.

After a treatment lasting for several months and consisting in the use of revulsive applications and of immovable splints, one may succeed in more or less completely restoring to the joint its proper functions.

The affection, however, is often followed by persistent pain and slight stiffness of the affected joints which impedes walking.

These morbid manifestations have a certain gravity, and the prognosis ought to be well considered.

Is this affection rheumatism?

The lesions have none of the attributes of the rheumatismal affection, neither its mobility nor its febrile phenomena, its sweats nor the frequency of cardiac or other visceral lesions. Besides, in most cases, there are no antecedents pointing to rheumatism, and no rheumatic symptoms have preceded or followed the arthropathies.

Is it necessary to admit arthritis of a scrofulous or similar nature?

In the antecedents one generally finds nothing to justify such a view.

One must must conclude then that these articular localizations are rheumatoid, that is to say, that they present a certain aspect which resembles that of rheumatic lesions but have a different nature.

These arthropathies are always developed during the course of an attack of infectious puerperism.

But when a phenomenon is presented more or less frequently in the course of a disease, it is regarded as a sign of the primary morbid condition; in the same way we say these articular lesions are the manifestations of puerperism.

This manner of regarding the phenomena is simple and conformable to the laws of general pathology. Others, however, think differently, and imagine that these articular alterations form a morbid entity, rheumatism. Thus a diathesis has been created as an addition to the attributes of an infectious condition.

All clinical facts connected with the two affections oppose such an interpretation.

1. In rheumatism there are one or several arthritic attacks dependent on hereditary rheumatic antecedents, and on special conditions of humidity.

In puerperism all this is wanting and if there should be a co-existence it must be regarded as an accident.

2. In rheumatism the arthrites are sudden, rapid, mobile, irregular and inconstant; there is a phlegmas is flux rather than a free phlegmonous arthritis. A joint swells and becomes tense, and the skin takes on a special appearance; afterwards all this vanishes, to make its appearance in another point.

In puerperism the articular lesion is fixed and tenacious; one does not meet with the rheumatismal trio, mobility, irregularity, instability. The articular determination may be frequently repeated, but the affection of one joint does not cease suddenly at the time that other oints are first attacked.

The physiognomy of arthritis is different in the two diseases.

3. In rheumatism, after the first attack the physician is put on his guard and informs his paticnt that there may be one or several consecutive

attacks. When once an attack of puerperal arthritis has been cured, the patient is not liable to a repetition of the disease when exposed to the causes of rheumatism.

4. In rheumatism cardiac manifestations are the rule. In puerperism they occur exceptionally.

Art. 241.—*Remarks on a New Midwifery Forceps.*

By Francis Vacher.

(*Reprinted from the Liverpool and Manchester Medical and Surgical Reports.*)

The forceps devised by Mr. Vacher is a modification of the short forceps. Having tested its utility, and found it has more than answered his most sanguine expectations, he brings it before the notice of the profession.

The instrument may be described as consisting of two blades or clams, essentially the same as those of ordinary short forceps, except that the lower blade is slightly shorter than the upper, being adapted to lie within it when the instrument is closed. At the lower extremity, or butt, of each blade, bent at an acute angle to its convex surface, is a handle, rounded off and slightly curved like a small horn. The handles are of black wood, but the bases, which are perfectly flat, are faced with steel, as are also the parts directed towards the blades, the steel being continuous with the blades. Along one edge of the handles' bases, and extending into the shanks of the blades, is a stout hinge, and near the opposite edge is a strong steel snap.

The measurements are:—

Length of the whole instrument, $8\frac{1}{4}$ in.
Interval between the blades at the widest part, $3\frac{1}{2}$ in.
Interval between the points of the blades, 2 in.
Greatest width of blades, $1\frac{5}{8}$ in.
Length of each fenestrum, $4\frac{1}{4}$ in.
Length of each handle, 2 in.
Depth „ 1 „
Breadth „ $\frac{3}{4}$ „
Length of hinge, $1\frac{5}{8}$ in.

The edges of the blades and fenestra are neatly bevelled off, and the upper or outer blade projects beyond the other sufficiently to prevent the possibility of the soft parts of the mother being caught. It should be mentioned also that the blades, when the instrument is closed, only lie perfectly close at the lower margin; along the whole length of the upper margin they are separated about an eighth of an inch—an arrangement necessary to enable the blades to pass one another.

The instrument is calculated, as are other short forceps, for delivery of the head when it is in the cavity of the pelvis, and when it has in great part emerged from the pelvic canal and rests on the perineum, and the circumstances which call for its use are the same as those demanding the application of the ordinary short forceps, that is to say, arrest of the head at the pelvic outlet, from inertia of the uterus, from slight disproportion, from mal-position, &c., or from any condition of

the mother or child likely to peril either in the event of delivery not being completed.

The method of proceeding with the instrument is as follows:—The patient being presumed to be on her left side, with the thighs flexed upon the abdomen; the operator, having the forceps (closed and well warmed and oiled) in his right hand, introduces two fingers of his left hand through the ostium vaginæ. The ends of the blades are then slipped along the palmar surface of the fingers, conducted to the head, and, guided by the fingers as far as they will reach, passed between the head and the hollow of the sacrum, the blades' ends being made to hug the head all the way. The ends of the handles, which of course point directly towards the anus, are now slowly and carefully separated with both hands, until their bases are in exact apposition, when the instrument locks of itself. The index finger of the left hand may now be passed into the rectum, and the margins of the blades felt to the right and left, and those using the instrument for the first time might satisfy themselves of the position of the blades, when introduced, by this simple means. If the forceps has been skilfully applied, the handles, when locked, will be in a line with the transverse diameter of the pelvis. The two handles united are next grasped like a corkscrew handle, and traction applied in the ordinary way. When the head has been drawn down so far that a finger introduced into the rectum can hook on to the right or left supra-orbital arch and retain it in position, the forceps should be unlocked, folded, and carefully removed.

The old rules—that forceps be introduced during an interval, great care taken that no soft parts or hair are included in the lock, and that traction be made during the pains, where there are any, and intermittingly like pains where there are none, and always in the direction of the axes of the pelvis—should be borne in mind by any one using this instrument, the same as if he were using another.

In conclusion, Mr. Vacher submits the following propositions regarding the instrument:—

I. That it is smaller, lighter, and more portable than any other form of forceps.

II. That it is altogether a different instrument to the long forceps, could not be confounded with it by a patient, and is as little likely to alarm the most timid as the whalebone fillet.

III. That it can be more easily and quickly applied than any other form of short forceps.

IV. That it may be applied without subjecting the patient to the preparations considered necessary before using the ordinary forceps—placing her across the bed, bringing the hips to the bed edge, emptying the bladder, &c.

V. That it may be introduced, and the blades brought into position and locked, almost without the patient being conscious an instrument is being used, and certainly without the pain caused by the pressure on the vagina and labia required to keep the blade ends of the ordinary forceps in close contact with the head during introduction.

VI. That it cannot fail to lock, and does so without the metallic clashing almost impossible to avoid when other instruments are used.

VII. That it cannot slip.

VIII. That with it, as with no other forceps, traction is effected without compression. This is a great advantage, for pressure on a child's head during delivery often brings on convulsions which may be fatal, sometimes paralyses the portio dura, sometimes permanently impairs the brain and produces idiocy.

IX. That the simple transverse handle is better adapted for traction, less cramping to the hand, less fatiguing to the operator than any other, not excepting the handles with short cross stops.

X. That it is a vectis no less than a pair of forceps, and when folded may be used as that instrument to assist the rotation of the head, correct mal-positions, and as a lever-tractor, the operator making a fulcrum of his left hand, and drawing with his right.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 242.—*On Complete Amenorrhœa.*

By Dr. MORITZ ALTSTÄDTER, of Pesth.

(*Wiener Medizinische Presse*, xii. 28—30; *Schmidt's Jahrbücher*, No. 9, 1872.)

In contrast to those cases in which menstruation occurs once or several times, and then for a long time or permanently ceases, Dr. Altstädter refers to those of complete amenorrhœa in which menstruation has never occurred, and even molimina menstrualia has never manifested itself. In cases of this kind the amenorrhœa occurs as a result of organic defects in development; as a result of impaired innervation of genital organs it does not very often come under observation.

This form of amenorrhœa may be conveniently divided into two classes :—

1. Amenorrhœa due to morbid increase of the functions of the nerves ending in the genital organs.

Since according to Bernard and Hermann irritation of the peripheral terminations of the vascular nerves may cause contraction of arteries, and that the current of blood may thus be completely suppressed, a similar irritative process may very well explain absence of regular ovulation through deficiency in the supply of blood.

2. Amenorrhœa due to morbid excitation of the vaso-motor centres or of some portions of the brain.

The view that amenorrhœa may be due to suppression or diminution of innervation or the functions of the vaso-motor nerves of the genital organs does not correspond to the results of the latest physiological investigations, as division of these nerves results in a total abolition of their functions, a relaxation of the arterial muscles, dilatation of the arteries and increased flow of blood to the organs in question, and therefore a condition favourable to irritation is established. One cannot then regard torpor of the vaso-motor nerves of the genital organs as a cause of the amenorrhœa. Probably the sympathetic nerves of the ovaries, like so many other sympathetic nerves, contain spinal fibres, and are connected with the cerebro-spinal system, and the diminshed excitation of these bodies is to be attributed to changes in these latter

nerves. Or one may regard as the cause of the amenorrhœa an irritative process affecting not the nerves of the genital organs, but the vaso-motor centres or the cerebral peduncles, the irritation of which, according to Budge, induces contraction of all the vessels, and thereby the influence of the encephalon on the vaso-motor nervous system may be made out.

Dr. Altstädter has been convinced by observations of patients that there is always a morbidly increased irritability of the nerves, and no stupor when amenorrhœa occurs as a result of nerve-disturbances, only that at one time this increased irritability affects the vaso-motor nerves of the genital organs, inducing a contraction of the arteries thus supplied, and at another time has its seat in the vaso-motor central organs or even in the brain, and causes a general contraction of the arteries.

A lady, aged twenty-three years, and who had been married for two years, well built, and presenting very slight signs of previous scrofulosis, had never menstruated; in early years she had suffered much from gastric cramp, and for a year and a half before she came under treatment, from fits of hysterical laughter. On examination no defect whatever of the sexual organs, nor a sufficient amount of blood disease could be found to account for the amenorrhœa; on the other hand, present and previously existing neuroses indicated impaired functions of the nerves of the sexual organs, so that this alone could be recognised as the cause of the affection. The treatment consisted in the administration of saccharated carbonate of iron, and in the use of chloride of sodium baths, together with a diet chiefly of milk and flesh. At the end of four weeks there was slight molimina menstrualia and a scanty discharge of watery blood; at the end of the next four weeks these phenomena were repeated, but in a smaller degree. With continued application of the same treatment there was at the end of the third month a somewhat more profuse discharge of pale fluid, and at the end of the fourth month there was a real sanguineous discharge which lasted for three or four days. The same treatment was still continued. After two repetitions the menstruation again ceased, presumably at the commencement of a pregnancy.

Art. 243.—*On the Connexion between Menstrual Irregularities and Insanity.*

By H. Sutherland, M.D.

(*West Riding Lunatic Asylum Medical Reports*, vol. ii.)

Dr. Sutherland has made a careful inquiry into the condition of the menstrual function in upwards of five hundred inmates of the West Riding Asylum, and has arrived at the following general conclusions:—

1. That in idiocy and cretinism puberty is usually delayed or absent.
2. That in epileptic insanity the fits are generally increased in number, and that the patients frequently become excited at the catamenial period.
3. That in mania exacerbations of excitement usually occur at the

menstrual period, and that a state of intense excitement is almost continuous in patients suffering from menorrhagia.

4. That in melancholia a large proportion of patients suffer from amenorrhœa.

5. That in dementia the patients usually menstruate in a normal, healthy manner.

6. That in general paralysis the change of life frequently occurs early.

7. That very rarely the catamenia reappear in aged insane women after prolonged cessation.

Art. 244.—*On Uterine Flexions and Versions, and the Mechanical Treatment of Backward Displacements of the Uterus.*

By Dr. Schutz.

(*Archiv für Gynäkologi*, Band iv. Heft, 3, 1873; *Gazette Hebdomadaire*, No. 6, 1873.)

1. The normal position of the uterus in a state of vacuity is anteversion or anteflexion. When a woman stands up the posterior surface of the womb looks directly upwards.

2. Anteversion and anteflexion ought not to be considered as pathological conditions, except when the uterus is fixed immoveably in its faulty position or restricted to the movements impressed on the organ.

3. Thickening or shortening of the ligaments of Douglas (habitual consequences of parametritis) constitute the usual causes of the persistence of anteversion and of abnormal exaggeration of anteflexion.

4. On the other hand, elongation of these same ligaments (through inertia of the muscular fibres) leads necessarily to retroversion and retroflexion, of which conditions it is the most frequent cause.

5. The line of flexion of the uterus follows exactly the primary anterior or posterior surface of the organ. If the body of the flexed uterus deviate more or less to the right or left, there is almost always a simultaneous rotation of the organ on its axis.

6. Normal anteversion or anteflexion of the empty uterus, abnormal flexion backwards from posterior fixation, and retroversion and retrodexion from laxity of the ligament of Douglas, are all increased by the pressure of the abdominal viscera.

7. Uterine catheterism does not suffice for enabling one to make out the normal situation of the uterus and the direction of its deviations. Carefully performed bimanual palpation conducts one more surely to a diagnosis.

8. Persistent anteversion and anteflexion of the uterus cannot be dealt with advantageously save by resolvent means, which tend to remove the exudations binding the womb in its faulty position.

9. Retroversion and retroflexions ought, whilst they remain reducible, to be treated by the aid of the hand and not of a sound; in the majority of cases, however, it is necessary to have recourse to the inter-

vention of mechanical means destined to maintain the uterus in its normal position (that is to say, in one of slight anteversion).

10. The sole rational means of dealing with a posteriorly displaced uterus is retroposition of the vaginal portion. The innumerable pessaries that have been devised hardly seem to produce this effect. (The author asserts that the vaginal pessary modified by himself does advantageously fulfil this indication, and he adds that intra-abdominal pressure maintains the uterus in a state of normal anteversion as soon as the vaginal portion is fixed backwards.

11. The pressure exerted by the abdominal viscera is not capable of modifying flexion. When in these cases of flexion pain is removed by the retroposition of the vaginal portion, the use of the sound in addition to that of the vaginal pessary may be indicated.

Art. 245.—*On Acute Inflammation of the Thyroid Body following Delivery.*

By Dr. Laure.

(*The Obstetrical Journal*, June.)

Dr. Laure read before the Société des Sciences Médicales of Lyons the account of a case of this kind which occurred in his practice. A multipara, aged thirty-four, was safely delivered of a healthy child. On the morrow she had high pulse, hot skin, and sighing respiration; but after repeated and careful examinations none of the organs revealed any disorder. No pain was complained of, only thirst. The tongue became dry, but there were no shiverings. Nine days after there were several accessions of dyspnœa, and the sister said the neck was enlarged. The right lobe of the thyroid was found to be enlarged, hard and tender on pressure. Respirations were painful, frequent, and hissing. Leeches were applied, but tracheotomy was deemed unnecessary at that time. Afterwards there was a sudden access of suffocation, and the patient died in three or four minutes. At the post-mortem only the thyroid could be examined, and this organ was found to be the seat of localized inflammation, and pus was found here and there. The enlargement of this body had compressed the trachea laterally, so that it barely admitted a goosequill. It was found that the interstitial tissue alone contained pus globules and embryonal cells. The closed follicles did not contain a single leucocyte. Dr. Laure also mentioned the case of a young girl who had thyroiditis following suppression of the menses by cold; but here a cure followed the application of leeches. Dr. Laure thought a simple incision, however much indicated in a collection of liquid, was useless in the presence of diffuse suppuration. Tracheotomy should not be postponed too long.

M. Fochier, in discussing the subject, thought that this acute thyroiditis was due to a septic influence, and related a similar case in which diffuse phlegmon of the limbs followed. Some interesting remarks on operations on the thyroid were made by MM. Chambard, Mollière, Drou, Gayet, and Icard.

Art. 246.—*On Tuberculosis of the Female Genital Organs.*

By Dr. Lebert.

(*Archiv für Gynäkologie*, Bd. iv. Heft 3, 1872; *Gazette Hebdomadaire*, No, 3, 1873.)

Localization of tuberculosis in the genital organs of the female has for a long time been regarded as extremely rare; but the works of Reynaud, Grisolle, Bristowe, and of Brouardel, in which last fifty-six cases are analysed, have proved that this localization is of more frequent occurrence than is generally supposed. Dr. Lebert has studied principally the relations of tuberculization of the genital organs and the functions of these organs. In thirty-three cases he was able to follow the history of the reciprocal influence of pregnancy and tuberculosis. The following are some of his conclusions:—

"Tuberculization of the internal genital organs in the female may be the principal primary localization, may coincide with pulmonary tuberculization, or finally, be secondary to this.

"The disease described as tuberculization of the neck of the uterus has not been proved; it most frequently represents a caseous degeneration of the epithelium of the cervical glands.

"The influence of pregnancy and of the menses on tuberculosis is shown most frequently between the ages of twenty and thirty years, or rather between those of twenty-five and thirty. It may also be manifested between the ages of thirty and forty years.

"The tubercular process exists in young girls; it may be arrested, but most frequently it takes a fresh development under the influence of pregnancy, usually from the first but sometimes at a late period.

"It is exceptional for females who have previously had tubercles to resist repeated pregnancies; the infants are generally feeble and become tuberculous.

"Pregnancy is most frequently arrested by advanced phthisis, but the initial phases of the tuberculosis follow their course, without being reduced during the period of pregnancy.

"Abortion, pregnancy, and delivery, in three-fourths of the cases accelerate the course of the phthisis. Pregnancy has no marked influence on the localization and the form of the tuberculosis. The unfavourable influence of delivery is especially shown in cases where pregnancy has favoured the attack of tuberculosis. The women suffering from tuberculosis have very little milk, and usually they are unable to nourish their infants, who are feeble, scrofulous, and, at a later period, tuberculous."

Art. 247.—*On the Treatment of Suppurating Ovarian Cysts by Drainage.**

By John J. Phillips, M.D.

(*The Lancet*, December 28, 1872.)

After referring to the recent excellent results following the complete removal of suppurating ovarian cysts, he said cases occurred in which it was found impossible to remove the tumour, or in which, for various reasons, extirpation was considered unadvisable. Under such circumstances, a free incision, and the stitching of the cyst walls to the edges of the abdominal wound, or the introduction of a drainage-tube, would probably be admitted to offer the best chances of success. This note was recorded to point out one source of danger in the treatment by drainage which he had not seen noticed. A case of suppurating ovarian cyst was admitted into Guy's Hospital under his care, and, after consultation, it was decided not to recommend excision. A drainage-tube was introduced, and the cyst daily washed out. The improvement in the patient's condition was most satisfactory. The cyst gradually contracted, so that only a few ounces of fluid could be injected, whereas thirteen pints had been drawn away at first. Six weeks after the operation, however, she was seized with severe abdominal pain, had all the signs of acute peritonitis, and died in a few days. The condition of the main cyst was found after death in every respect satisfactory. On its right side there was a small mass of compound cysts, containing gelatinous material with calcareous degeneration of their cells; but one of the small cysts contained pus, and this was firmly adherent to the mesentery. Its wall was thin and shreddy, and it seemed evident that by contraction of the main cyst such traction had been made on this from adhesion as to lead to thinning of the wall of the cyst, and its ultimate rupture. Pus was found in the peritoneum, and could be made to exude from the small cyst by pressure.

Art. 248.—*On the Cure by Absorption of the So-called Fibrous Tumours of the Uterus.*†

By M. Gueniot.

(*Gazette Médicale de Paris*, No. 11, 1872.)

1. The cure by absorption of certain fibroid tumours of the uterus ought from henceforth to be regarded as a definitely established fact.

2. The mode of disappearance of tumours is even susceptible of a rapid dissolution; some few months have sufficed in various cases for the complete absorption of very large myomata.

3. In the cases hitherto observed absorption took place during the period of activity of the genital functions; the puerperal state exercises an evident influence only in very exceptional instances.

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* Read before the Obstetrical Society of London.

† Communicated to the Académie de Médecine, Paris.

4. Uterine myomata may disappear without operation in two other ways: either by spontaneous expulsion or by gangrenous destruction or suppuration. But the disappearance by absorption is the only process which is completely exempt from danger, and is always followed by recovery; it will, therefore, be always a proper course to excite this process.

5. Although the attempts made with this end in view have hitherto been almost constantly attended with negative or doubtful results, certain facts, however, justify us in supposing that on this point therapeutics is in the course of progress.

6. As far as one may be allowed to judge from analogy, uterine myomata, in order to be susceptible of absorption, ought to undergo a preliminary fatty degeneration.

7. Finally, after this datum of pathological physiology, the employment of substances that are regarded as steatogenetic, such as arsenic, phosphorus, lead, &c., seems to be particularly indicated for obtaining the above-mentioned result.

Art. 249.—*On Endometritis.*

By Lombe Atthill, M.D.

(*British Medical Journal*, February 8.)

At a meeting of the Dublin Obstetrical Society, Dec. 14th, 1872, Dr. Lombe Atthill read a paper on this affection. It might be defined as a low inflammation of the uterine mucous membrane, with vascular engorgement and implication of the glandular structure of the organ. Sometimes the cervix was engaged. The symptoms of endometritis were pain, leucorrhœa, dysmenorrhœa, menorrhagia, and reflex irritation. Pain was generally referred to one or all of three localities—viz., to the sacrum; to the edge of the false ribs, thence shooting to the shoulder on the left side; and to a point just over the pubes. The second was often almost pathognomonic of the disease. The physical signs of endometritis were: increased length of the uterine cavity; increased size of the same; increased bulk of the whole fundus; augmented sensibility of the uterine mucous membrane; a patulous *os internum;* and often an abnormal sensitiveness of the mucous membrane. In the treatment, palliative measures, including rest, warm hip-baths, mild aperients, and, above all, local depletion, sometimes acted beneficially. The last-named might be effected by leeching, but was far more effectually carried out by puncture of the cervix in one or two places to the depth of an eighth of an inch or thereabouts. Dr. Atthill exhibited a knife designed for this purpose. In severe cases operative interference was necessary; either by injecting fluids into the cavity of the uterus, or by passing up a piece of solid caustic, or by the application of fuming nitric acid, the acid nitrate of mercury, or other active agent. Dr. Atthill considered the application of fuming nitric acid to the interior of the uterus as simple, safe, and painless; and to Dr. Kidd belonged

the priority of the adoption in Ireland of the internal application of the acid; while in America Drs. Miller and Marion Sims had previously carried out the same practice. The author advised the preliminary dilatation of the cervix uteri with sea-tangle or sponge-tent. The anterior lip of the uterus was then seized with a hook, and a stilette armed with a comparatively thick layer of cotton or roll of lint was passed rapidly up to the fundus. Strong nitric acid thus applied seldom caused any pain, and was not followed by any grave consequences, as the injection of even weak caustic solutions often was. In all cases where it was healthy, the cervix uteri should be protected from the action of the nitric acid. To reach all parts of the uterine cavity with the acid, the author had devised an intra-uterine speculum, which could be expanded by means of a serew working through a long handle. The details of three cases of endometritis were given, and Dr. Atthill concluded by a vindication of the method of cauterization of the uterus with nitric acid from the objections raised against it.

Dr. Churchill made some general remarks on granular degeneration of the uterus, and on the harmlessness of the application of strong nitric acid to the uterine cavity.

Dr. Ringland related his experience of the local remedies to which Dr. Atthill had alluded. He considered solid caustic to be a most valuable remedial agent. He had seen injection of iodine followed in one case by a severe attack of hysteria, and from the use of nitric acid in hæmorrhoids and to the cervix uteri he had long ago been led to think of applying it to the interior of the uterus.

Dr. Denham had seen the president, Dr. Kennedy, controlling hæmorrhage fully twenty-five years ago by passing up such powerful applications as strong nitric acid and butter of antimony into the uterine cavity. He had himself thrown up solution of iron and other strong fluids with safety and success.

Dr. James Little bore testimony to the facility attending the use of Dr. Atthill's speculum.

Dr. Kidd said that Ambroise Paré had applied strong nitric acid to the interior of the uterus, and it had long since been employed in the extirpation of warty growth.

Dr. Byrne believed that nitric acid did not produce a slough in the interior of the uterus.

The President (Dr. Kennedy) mentioned that strong caustics had been used in the treatment of uterine affections since 1840, at least. He corroborated Dr. Atthill's opinion as to the value of local depletion in some cases of endometritis. However, he preferred leeching as a means of carrying this out.

Art. 250.—*On Interstitial Uterine Fibroma.*

By Dr. Abeille.

(*Gazette Médicale de Paris*, No. 11, 1872.)

Dr. Abeille gives an elaborate report of a case in which he removed with success a large interstitial fibroma of the uterus, and concludes his contribution with the following remarks :—

"The operation of which I have just given a description is one of those which present the greatest difficulties to be overcome in their performance, even though one might have been previously in a position to give a precise account of the relations of the tumour to the uterine cavity. If, as in the present case, these exact notions are impossible, because the finger cannot in any fashion be carried to the fundus of the uterus, the difficulties are still greater, and one cannot but remain undecided in the face of unforeseen conditions.

"Whatever be the operation that is practised, the dangers inherent in the manual operation to parts which need protection, may generally be avoided when the eye serves as guide to the hand of the operator. Here the finger replaced the eye as conductor and exploring agent; but the finger unfortunately cannot be passed to all parts, and consequently cannot discover everything; hence an almost insurmountable difficulty.

"And yet this operation was one of those which are imperatively demanded and necessitated by the urgency of the case; for the life of the patient was menaced by profuse hæmorrhages, which succeeded each other rapidly, and which nothing could definitely arrest save ablation of the tumour which gave rise to them.

"In a memoir published in 1868 (*Gazette Médicale de Paris*), on uterine fibrous tumours, and especially on intra-uterine fibrous bodies, I endeavoured to demonstrate the difference in the symptoms furnished between intra-uterine fibrous bodies attached to the uterus by a more or less elongated pedicle, and those which are not pediculated, but included in a greater or less extent of the submucous layer, or, in other words, interstitial fibrous bodies.

"When the pediculization takes place at the level of, or a little above, the superior opening of the cervix, whatever may be the size of the tumour, a period will certainly arrive at which the uterus, contracting energetically at a menstrual epoch, causes the growth to protrude from the orifice after more or less considerable hæmorrhage. When the tumour has passed into the vagina, provided it is still fixed to the uterus by its pedicle, the flow of blood becomes continuous. This to the practitioner accustomed to the study of these growths, is a sign which indicates an early operation; these are simple cases, and the operation, which consists in cutting through the pedicle, is very easy. It may happen that the pedicle, strangulated by energetic and continuous contractions of the neck, mortifies together with the body of the growth, which is then spontaneously detached. Where the pediculization takes place at a more elevated part of the uterine cavity, even at its middle, the uterus being divided into two portions by a transverse line, the tumour may still be expelled during uterine contractions. For this result to take place spontaneously, more time and more energetic contractions of the uterus are required. In some cases where the cervix is almost completely effaced through the contractions and the inferior segment of the uterus is folded backwards over the tumour like a reversed ruffle. When this has happened, the patient is generally exhausted by repeated hæmorrhage.

"The more the pediculization of the fibrous body is raised above the inferior portion of the cavity, and the nearer it approaches to the fundus the more difficult does it become for the uterus to expel the tumour

from its cavity, notwithstanding energetic and repeated contractions. This may be readily conceived, for displacement of the tumour is hardly possible unless the womb becomes completely inverted. When the pedicle is inserted at the fundus of the uterus, whatever be the size and thickness of this pedicle, spontaneous expulsion of the fibroma becomes absolutely impossible.

"The pains may be continuous for a very long period, with or without loss of blood; in these cases, the uterus filled by the tumour, distended, and with its cervix completely effaced, endeavours to free itself by continuous contractions. I have observed a case of this kind: A young woman from whom I had previously removed two pedunculated fibrous polypi, was seized six months later with acute and almost continuous pains, which were not associated with loss of blood. After a continuance of these pains for fifteen days, and several examinations which enabled me to make out an ovoid tumour connected with the tumour, but on none of which could I distinguish the cervix and os, I fell into the error of supposing that the os was obliterated, and that I had to deal with a degenerated uterus. Finally, I was able to make out the opening into the cervix posteriorly, the uterus being in a state of retroversion. This opening was very small, and the thinned lips of the os were closely applied to the tumour, which was of an ovoid form. I was able to operate upon the patient after having freely incised the neck. On this occasion I had to deal with a colloid plasmoma, which was reproduced very rapidly, and acquired considerable proportions. Seven operations were performed for the removal of repeated growths in eighteen months. The growth was fixed to the fundus of the uterus by a thick pedicle, which had formed adhesions to large portions of the uterine walls.

"The conditions are different in cases of interstitial growths of the uterus, that is to say, those which are developed behind the mucous membrane and in the muscular or inodular tissue, and which, as they enlarge, push before them into the uterine cavity the mucous membrane which covers them. Wherever be their starting-point, and whatever be the extent of their development, their tendency is to increase and develop, giving rise incessantly to serious symptoms, without any possibility of their spontaneous expulsion.

"As a fibrous polypus with a distinct pedicle, which can at any time be removed, which sometimes is spontaneously expelled from the uterine cavity into the vagina by a process analogous to that of parturition may, to the exclusion even of its histological constitution, expose its subject to danger in consequence of repeated hæmorrhage, with much more reason will an interstitial fibroma be a serious affection.

"This is undoubtedly, of all uterine fibromata, the one which in the same period of time causes more readily the death of the patient by the innumerable hæmorrhages to which it gives rise. The sub-peritoneal fibromata which may acquire fabulous proportions in the abdominal cavity are not so dangerous as these, for the simple reason that they do not in the immense majority of cases give rise to uterine hæmorrhage, and that, when they excite peritonitic symptoms, they do so from their monstrous size, or from having been associated with some external cause of peritoneal phlegmasia.

"The submucous interstitial fibroma, then, of all uterine fibrous growths, is the most dangerous, from the metrorrhagia to which it gives rise, from the impossibility on the part of the uterus to expel the tumour, from the difficulties in diagnosis when it has not acquired any considerable size, and from the difficulties without number which are associated with operative attempts at enucleation. If an interstitial fibroma commences at the fudnus, and gradually extends its roots towards the cervix, a considerable interval of time may elapse before the disease can be recognised even by an experienced hand, and when it can be recognised it may happen that it is impossible to make out by the touch the exact limits of its connexion with the uterine walls.

"Serious mistakes in diagnosis have been made by very expert practitioners in consequence of their exploring the uterus between menstrual periods. Thus it is of the highest importance to remember that in all cases where the symptoms lead one to suspect the presence of an intra-uterine polypus, the exploration ought to be made during the menstrual evolution, because it is during this period that the uterus, endeavouring to expel the tumour, pushes it towards the cervix, and causes great dilatation at this region. The more susceptible the tumour of mobilization by reason of its pediculization, the further it advances towards the cervix during this process.

"The so-called migratory polypi owe their facility of advancing towards the os tincæ, of becoming engaged either wholly or partially within the orifice at certain periods, and of returning into the uterine cavity when the cervix retracts, to the length of their pedicles, and to their freedom from adhesion to adjacent portions of the uterus. When the pedicle is long or inserted at the cervical portion of the uterus, the tumour may readily pass through the orifice; when it it not so very long, the tumour is fixed for a time in the orifice, and afterwards ascends for a time. Only polypi of small dimensions, and especially the mucous polypi, can at each menstrual period be expelled into the vaginal cavity to ascend into the interior of the uterus after the cessation of the flow of blood.

"If the researches which I have made are complete, this is the first case of interstitial fibrous tumour of considerable size and included in part of the uterine walls that has been removed by a surgical operation.

"It is certainly more easy for the surgeon, if not less dangerous for the patient, if in the operation of gastrotomy for the removal of a sub-peritoneal filroma, or even a supra-vaginal interstitial fibroma, section of the uterus be made above the partition, instead of the dissection being carried into the uterine cavity itself for the enucleation of the tumour."

Art. 251.—*On Chronic Inflammation of the Cervix Uteri, its Effects and Treatment.**

By Thomas More Madden, M.D.

(*Medical Press and Circular,* February 12.)

In the course of his observations, he said that chronic inflammation of the cervix uteri was the most frequent of all the diseases peculiar to women. Thus, according to Dr. More Madden's experience, one-tenth of the patients that attended the Dispensary for Diseases of Women belonged to this category, and in private practice he found this disease quite as prevalent. Amongst the consequences of chronic inflammation of the cervix uteri, Dr. Madden included endometritis, ulceration and hypertrophy of the cervix, menorrhagia, dysmenorrhœa, vaginitis, leucorrhœa, hysteria, and, above all, sterility. The treatment of these diseases he regarded as still vague and unsatisfactory, generally protracted, and frequently unrewarded by the cure of the disease. He considered that this was mainly owing to the constitutional causation of these diseases not being duly appreciated in practice. No one conversant with Medical literature could fail, on comparing the medico-chirurgical publications of the present time with those of any former period, to observe the great prominence now given to the study of uterine affections, and the importance attached to them. The questions that not unnaturally arose were, had these diseases really become more common than was formerly the case? or is it, he asks, merely now the fashion of the day to ascribe all obscure complaints to uterine disorder, as it was formerly to attribute them to "the vapours" or the "spleen," or the more modern "nervous and bilious complaints," each of which was, at one time, so prolific a supposed cause of patients' ailments, and more certainly of physicians' fees? Or have uterine complaints been always as prevalent, though only now discovered by the improved means of diagnosis furnished by modern gynæological science? Opposite as these doctrines appeared, and warmly as they had been espoused by conflicting authorities, there was, nevertheless, as in most other disputed subjects, some truth, as well as some error in each of them. Uterine diseases were more commonly met with, as well as more in vogue, and above all they were more easily recognised than was formerly the case. The vaginal speculum was unquestionably the greatest improvement that modern science had contributed to this department of Medical practice. It was as essential in the treatment of uterine complaints, as the stethoscope in the diagnosis of pulmonary or cardiac diseases. But it might be abused as well as used, and for his part he could not approve of the indiscriminate resort to the speculum now so general in all cases of suspected uterine disease, and more especially when occurring in young unmarried women. He had had daily occasion, for some years, to induce as many specculums in hospital and dispensary practice as most practitioners, but yet he never regarded himself as

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* Read before the Dublin Obstetrical Society, Feb. 8th.

justified in so doing in any case in which the instrument could be possibly dispensed with. Many cases had come under his notice in which patients having been previously treated for ulceration of the os uteri, insisted on being "examined," and when, as not unfrequently happened, he did not think this procedure necessary, those persons were dissatisfied, and considered themselves neglected. And yet in a large proportion of such cases, by simply paying attention to the general health of the patient, ordering the free topical use of cold water, and enjoining total abstinence from marital relations, all the symptoms would subside, and the invalid would regain perfect health, the *mens sana in corpore sano*, far more completely and rapidly than if the parts had been subjected to the mechanical irritation of repeated examinations with the speculum, and so aided in keeping up that morbid concentration of the imagination on the supposed seat of the disease, which is so common in such cases. But whenever extensive disease of the os or cervix uteri exists, the use of the speculum is, of course, indispensable. Dr. More Madden then described the symptoms of uterine disease, and next described the causes of the prevalence of these affections. Of these, he said: "In considering the causes of chronic inflammation and ulceration of the uterus, and especially of the cervix uteri, undue importance is now-a-days attached to the local exciting causes of these affections, whilst the constitutional predisposing causes which I consider as the *fons et origo malorum* are disregarded. This matter is one of considerable practical importance, for if the views herein set forth as to the constitutional causation of local uterine diseases attended by inflammation, ulceration, sterility, and other organic and functional derangements be right, the treatment of these affections will be materially changed, improved, and simplified. The scrofulous diathesis is, in my opinion, and, according to my experience, one of the most common predisposing causes of the disease that form the subject of the present paper. This fact, as far as I am aware, is completely ignored by all the recognised authorities on the subject, and my chief object in coming before the Obstetrical Society with this memoir is to call attention to the connexion between struma and the most common forms of uterine disease, in the hope of thus contributing to a more satisfactory and rational plan of treating these complaints. My attention was first called to this point by noticing that amongst the large number of patients suffering from chronic uterine affections, such as leucorrhœa, endometritis, inflammation, ulceration, or hypertrophy of the cervex uteri, ovarian pain, sterility, repeated miscarriages, derangements of menstruation, &c., that come under my observation at the Dispensary for Diseases of Women attached to the Lying-in Hospital, a very considerable proportion was obviously of well-marked scrofulous habit; in many instances they suffered from actual scrofulous disease of other parts, and in others I was able to trace the influence of a hereditary scrofulous taint. In these cases the uterine symptoms, the character of the inflammation, the form of ulceration, and the nature of the discharge were all impressed with the scrofulous type. The constitutional condition of the patient being thus strumous, the local uterine disease is precisely analogous to the scrofulous inflammation of the conjunctiva or phlyctenular ophthalmia of strumous children, being attended by a similar

tendency to produce excoriation or phlyctenulæ of the mucous membrane, and by a somewhat similar glairy discharge, and being as impracticable under ordinary treatment. Many of the symptoms of scrofulous inflammation are generally present in the cases under consideration; in these the inflammatory action is as insidious in its first encroachment as chronic in its course, as obstinate in its duration, and as difficult to cure. Like all other forms of scrofulous inflammation, that affecting the cervix uteri is peculiarly apt to lead to the formation of ulcerations of the characteristic strumous appearance, irregularly circular in shape, superficial in depth, pale and flabby in aspect, possessing little natural sensibility, but occasionally angry and irritable, tedious beyond patience when neglected or maltreated, and best cured by the treatment appropriate to other diseases of the same character. The treatment of the complaints now under consideration may be divided into—1st, the topical medication required by the widely varying forms of inflammation, hypertrophy, or ulceration that may be present in each case; and 2ndly, the cure of the constitutional derangement which always accompanies, and I believe very frequently causes the local disease. At the present time almost exclusive attention is paid to the former, the latter being as generally neglected. For my own part, whilst I attach due importance to the local treatment of all uterine diseases, yet I am fully convinced by experience that the reason the cases we are now considering are generally so tedious and protracted in their cure is, that the greatly improved local treatment now relied on is not assisted by proper constitutional remedies. I shall therefore, in the first place, briefly allude to the constitutional treatment I consider necessary in these cases, for, as I have just stated, I regard chronic inflammation of the uterus and its results, including ulceration, as a consequence of a coincident constitutional disease, and therefore not to be cured by local treatment alone, except in those rare cases in which it is due to local mechanical irritation. In accordance with the views already expressed as to the frequent connexion between chronic uterine complaints and the scrofulous diathesis, I would strongly urge the advisability of giving a fair trial to anti-strumous remedies and regimen in the cases now under consideration. I have seen numerous instances of what I regard as scrofulous ulceration of the cervix uteri thus cured without any local application beyond that of a little tincture of iodine and the use of vaginal injections. My experience of their use would lead me to recommend the simple preparations of iodine given in the small doses originally ordered by Lugol, such, for example, as the one-eighth of a grain of iodine with one-fourth of a grain of iodide of potash in preference to the larger doses of its compounds now generally prescribed. In cases where symptoms of anæmia predominate, the various combinations of steel with iodine are of singular benefit, all symptoms of uterine disease often disappearing under their use without any local treatment whatever. Of all the remedies I have tried in these cases I have found no one so generally serviceable as a mixture of equal parts of cod-liver oil and syrup of iodide of iron. Scrofula, although a frequent, is by no means the only predisposing constitutional cause and accompaniment of the diseases we are discussing, and hence in a large number of cases we must have recourse to other constitutional treatment to alter that

morbid state of the system which is the remote cause of the existing uterine congestion or inflammation. This must be effected by a modified antiphlogistic treatment, conjoined with rest, tonics, and sedatives, as well as the local use of baths, or injections, caustics, astringents, counter-irritants, or local depletion according to the special requirements of each case. As a rule, chronic inflammatory disease and its effects on the uterus whether limited to the cervix or affecting the entire organ, when not of scrofulous origin requires the administration of mercury, which is best given in the form of small doses of the perchloride, one twenty-fourth of a grain three times a day, in the tincture or infusion of bark. Notwithstanding the prevailing scepticism as to the efficacy of medicines in these chronic uterine affections, my experience of many cases has fully convinced me that although the local symptoms may subside for a time under purely local treatment, the patient is more quickly as well as more permanently cured by the administration of constitutional remedies, such as that just referred to, whilst due attention is, at the same time, paid to the local treatment of the ulcerated or inflamed part. The prevailing type of chronic uterine complaints, like that of all other general diseases of the present time, is essentially asthenic, and require the administration of tonics in almost every instance, and more especially the preparations of steel, iodine and quinine combined, when circumstances admit of it, with change of air and mineral waters. The curative effects of change of climate and of mineral and thermal waters in cases of chronic uterine disease as well as other disorders is a subject on which I am entitled to speak with some confidence, having given my attention to it during several years of travel and clinical observation in the health resorts of the Continent and the Mediterranean shores of Europe and Africa, as well as at the spas of Germany, France, and Italy. No class of remedies is so useful and so generally appropriate in all chronic uterine diseases of an inflammatory origin, and more particularly when producing ulceration or hypertrophy of the cervix uteri, as mineral and thermal waters used at their sources, and hence conjoined with change of climate. These maladies are peculiarly chronic in their course, and almost imperceptibly produce their ultimate result—namely, the causation of structural or organic mischief." Dr. Madden then proceeded to point out seriatim the various spas suitable for the treatment of the different forms of chronic uterine disease. With regard to the local treatment of cases of chronic inflammation, ulceration, and hypertrophy of the cervix uteri, he fully admitted the great importance of local treatment in these cases. Vaginal syringing, either cold or tepid as may be most agreeable to the patient, was the first method of using any topical remedy in uterine diseases, and it remained one of the most useful and indispensable. Various fluids have been proposed for this purpose. In cases of mere inflammation or congestion without ulceration or bad leucorrhœa, cold or tepid water or infusion of chamomile thrown up by a syphon vaginal syringe, in quantities of a pint or two twice daily, was perhaps the most useful. Where an astringent is required the decoction of oak bark, with or without sulphate of alum, ʒj to the pint, or a similar quantity of the compound powder of catechu mixed in warm water, strained and used cold, or a very weak solution of the perchloride of iron, generally answered. If the discharge be

offensive, a weak solution of permanganate of potash or of carbolic acid might be tried, and if pain be the prominent symptom, a little liquor opii (3j ad Oj) might be resorted to. These cases seldom come under observation till the disease had passed from the stage of congestion or inflammation into that of ulceration. If, however, the cervix was found congested on examination, whether ulceration was present or not, it might be relieved by a few punctures with a sharp bistoury in the congested organ, or with less trouble to the patient and generally equally effectually, by the application of a plug of wadding saturated with glycerine to the os and cervix uteri. In this way it acted as a powerful depletent, and on the removal of the plug, which should be withdrawn within twenty-four hours, the part which might have previously been congested and angry-looking would be found pale and of normal colour, or if ulcerated, the abraded surface will appear perfectly clean and healthy-looking. It need hardly be observed that these effects were not permanent; but the repetition of the same application would for a long time continue to produce similar results, until either the remedy lost its power or the disease was cured. In the majority of cases of simple ulceration of the os and cervix uteri a free application of a strong tincture of iodine twice a week was the best and most speedy curative local application that can be made. If that failed, as it sometimes would, the solid nitrate of silver or a strong solution of this salt may be similarly employed. Whenever there was any well-founded suspicion of the ulceration being of syphilitic origin, the acid nitrate might be resorted to, but required to be most cautiously used. In the severer cases of granular ulceration extending, as was frequently the case, from the os through the patulous cervical canal to the body of the uterus, a single application of the fuming nitric acid, pressed firmly against the diseased surface and passed through the cervix into the cavity of the uterus by a wire thinly coated with cotton wadding dipped in the strong acid, when aided by proper constitutional treatment, efficiently destroys the most angry and obstinate ulceration, leaving a clean, healthy, granulating surface as soon as the eschar had fallen, and seldom required to be used a second time if properly applied. With regard to the potassa cum calce, in the few cases in which he had seen it employed the results were not such as would induce Dr. Madden to recommend its use. Of the stronger caustic—the potassa fusa—advocated by Dr. J. H. Bennet and by the late Sir James Simpson, his experience led him to coincide entirely with Dr. West, "that when adopted it is usually either out of place or superfluous." He had seen great injury done in some cases which came under his observation, in which bolder practitioners had used caustic potash freely to cauterize an ulcerated os uteri or to reduce an enlarged cervix. In two cases he was obliged to attempt to restore by dilatation the canal of the cervix, which had been almost obliterated by the improper application of caustic potash, and one in which the vagina was thus occluded. Nor were these the only evils which might follow the employment of this heroic remedy. The author had had to treat acute metritis produced in this way, and he therefore had not thought himself justified in using a remedy liable to produce such consequences when other agents equally powerful but less dangerous, could be employed. Hypertrophy of the cervix uteri considered as a

cause of sterility had attracted more attention than it deserved, and a variety of heroic surgical procedures had been proposed and were practised for its removal with this view. Those included amputation of the enlarged cervix, as recommended by Dr. Marion Sims, the application of potassa fusa or of the potassa cum calce for the purpose of melting down the enlarged cervix as advocated by Dr. J. H. Bennet, and the employment of the actual cautery as practised by French surgeons. Now, in his (Dr. Madden's) opinion, all these procedures were, as a rule, not only useless but injurious in the majority of instances of hypertrophy of the cervix uteri, though each of them might be necessary and beneficial in extreme cases and under exceptional circumstances. Dr. Madden concluded his excellent paper as follows:—"The practical conclusions which I would venture to submit to the consideration of the learned Society which I have the honour of addressing these observations to, as the result of my experience of chronic uterine disease, and on which I trust to elicit the opinions of those who have had such opportunities of investigating the subject, are briefly as follows:—1st. That chronic inflammation of the uterus, and especially of the cervix uteri, producing hypertrophy and ulceration, is in the majority of cases occasioned by constitutional causes, one of the most frequent of which is the scrofulous diathesis. 2nd. That these diseases require constitutional as well as local treatment; the constitutional treatment required has been already discussed, and I would again urge the benefits derivable in these cases from the use of the mineral and thermal water I have already spoken of. In many cases of chronic uterine inflammation and ulceration of the cervix uteri, the inflammation may be subdued and the ulcer cicatrized by local application alone, but whenever general treatment is not combined with the local measures depended upon, the inflammation subsides or the ulceration heals much more slowly, and the disease is far more liable to recur within a short time than is the case when suitable constitutional remedies are also resorted to."

Art. 252.—*On Intra-Uterine Medication.*

By Robert Barnes, M.D., F.R.C.P., Obstetrical Physician to St. Thomas's Hospital.

(*British Medical Journal*, January 11.)

To avoid the dangers of intra-uterine injections, several precepts have been enjoined. The great object aimed at is to avoid or lessen the risk of the fluid running along the tubes. This it is sought to attain—1. By securing free dilatation of the cervix uteri before injecting, so that the fluid may readily run back into the vagina. For this purpose the preliminary use of laminaria-tents is advised. 2. By using only graduated quantities of fluids, and injecting very gently and slowly. 3. By using a double canula, so as to secure a return-current. To effect this the more surely, the openings of the canula at the uterine end are made at different levels.

Dr. Barnes has not much faith in the double canula. The end which should serve for the return-current is liable to be choked. The pre-

liminary free dilatation of the cervix, and the use of gentleness in propelling the fluid, should never be omitted: but the author does not believe that the observance of these precautions is an absolute guarantee against accidents. It is probable that the mere forcible impact of any fluid striking upon the inner surface of the uterus, especially upon the fundus, may cause severe pain and prostration. Since nothing is gained by forcible injection, this consideration affords additional reason for injecting with all possible gentleness; hence it is well to use injecting-pipes having lateral openings of very fine calibre, so as to "pulverize" the liquid.

Dr. Barnes strongly advises not to use injections at all in cases of marked flexion of the uterus. Even if we dilate the cervix first by tents, and maintain the uterus erect during the injection, we cannot always be sure that the flexion will not be reproduced, so as to prevent the issue of the fluid; and it must not be forgotten that it is especially in these cases that the uterine cavity is likely to be enlarged, and the Fallopian tubes dilated.

The general conclusion at which Dr. Barnes has arrived, is to restrict the use of intra-uterine injections within the narrowest limits. He rarely employs them now, except in cases of urgent danger from menorrhagia.

We may obtain almost all the advantages that injections are capable of giving by other means. For example, the same agents which are useful in the form of solutions for injection, may be employed either by swabbing, or solid, or in the form of ointment. Thus, where the use of chromic or nitric acid, or perchloride of iron, or iodine or bromine is indicated, these agents can be applied soaked on a sponge or piece of cotton, or on a glass- or hair-pencil, the cervix having previously been well dilated. Nitrate of silver is far better applied in the solid form: even then it is liable to cause severe colic. The risk of this may be lessened by reducing the caustic, by fusing it with an equal part of nitrate of potash. The ordinary way of using the solid nitrate of silver —that is, by holding a piece of the stick in a forceps or porte-crayon— is objectionable. The piece may fall out or break, and a fragment left behind in the cervix or body of the uterus may give rise to intense agony, and even metritis. To avoid this accident, Dr. Barnes has for many years adopted a contrivance he learned from Sir Benjamin Brodie, who armed the ordinary probe by dipping the end into nitrate of silver, fused in a watch-glass over a spirit-lamp. He uses special probes of platinum or silver, mounted on handles of convenient length. These probes may be curved to follow the course of the uterine canal. This is far the best way of applying nitrate of silver to the os and cervix uteri; and it is the only safe way of applying it to the interior of the uterine cavity. The armed end of a probe may be passed into the uterus without the speculum, although the aid of this instrument is sometimes convenient. For example, unless the armed probe be protected by a canula, the caustic will first touch the vulva and vagina in its passage, which is apt to leave unpleasant effects, and the guiding finger of the operator will be stained.

One of the most widely useful topical applications to the mucous membrane of the cervix and body of the uterus is sulphate of zinc.

The value of this agent, when applied to the relaxed or morbid mucous membrane of the vagina in the form of injections, is familiarly known: how to apply it to the uterine mucous membrane is, therefore, a matter of great interest. This has been accomplished by Messrs. Johnson, the well-known assayers, on the suggestion of Dr. Braxton Hicks, who prepared small cylindrical sticks of fused sulphate of zinc, weighing three and five grains. These can be carried quite into the uterus without having touched the vagina by the way, by means of a canula, first made by Messrs. Weiss, and now generally sold by instrument-makers. It consists of a silver canula of the size of a No. 8 or 9 catheter, gently curved, open at the end, and supplied with a stilet or piston. The stick of sulphate of zinc or other material is placed in the uterine end of the canula; the instrument is then passed into the uterus just as the uterine-sound is passed, the patient lying on her left side; and the operator's finger, placed on the os uteri, guides the instrument. It is a great advantage of this contrivance that the use of the speculum is quite unnecessary after it has aided in establishing the diagnosis which supplies the indication in treatment. When the instrument has gone the proper depth, the piston pushes out the stick, and the instrument is withdrawn, leaving the stick to dissolve. This it soons begins to do, and, by its speedy effect in constringing the mucous membrane, it keeps itself *in situ* until it is completely dissolved.

Nitrate of silver, reduced by admixture with nitrate of potash, may be used in the same way; so may persulphate of iron, but this should be considerably reduced.

A most precious way of applying astringents, caustics, solvents, or alteratives to the interior of the uterus, is in the form of ointment or pasma. In this way almost any substance can be applied. Where grease is objectionable as a vehicle, a pasma of suitable consistence may be made by aid of glycerine or other matters. In this form we may use substances which cannot easily be applied in any other way. For example, we can hardly use bromine, or iodine, or mercury, in a solid shape; and to use them in liquid form is open to the objections already discussed. Almost anything can be made into an ointment or pasma, and thus we get a complete practical command over a large range of useful agents.

To introduce ointment into the cavity of the uterus, Messrs. Weiss have made from Dr. Barnes's design a very convenient instrument, also capable of being used like a sound without the speculum. The instrument is easily charged by dipping it into the ointment—a sufficient quantity of which is carried into the uterus, and, by pushing up the piston, is deposited there.

If it be desired to apply a powerful liquid caustic, as chromic acid or strong bromine, to the interior of the uterus, this can be done by the ointment-carrier. A few shreds of asbestos may be packed in the space between the eyelet-holes and charged with the fluid. On ramming down the piston, the fluid will be squeezed out.

In discussing the action of powerful styptic injections in arresting flooding after labour, the conditions under which the practice Dr. Barnes has recommended is indicated have not, he says, always been accurately appreciated. The great agent, of course, in stopping hæmorrhage, is

the constriction of the uterine vessels by the muscular wall in which these vessels run. All the ordinary means of arresting hæmorrhage are aimed at producing muscular contraction. But muscular contraction depends on nervous power. Thus cold, grasping the uterus, introducing the hand, galvanism, all depend for their efficacy upon the spinal cord being able to respond to the peripheral call. When, therefore, these means prove sufficient, the inference is *generally* warranted that the case, although serious, is not desperate. The condition is very different when the excito-motor function is suspended; when neither by peripheral excitation, nor by centric stimulus, the nerve-force can be drawn or sent from the spinal cord to the uterus in sufficient intensity to cause contraction. At this point, unless the bleeding is arrested by syncope, or by temporary enfeeblement of the circulation, the patient is in the most imminent danger of death. The slightest shock or disturbance will extinguish the flickering spark of life. Under such circumstances Dr. Barnes has known death follow, to all appearance immediately caused by, the injection of cold water, or passing the hand into the uterus. If, instead of cold water, we inject a solution of perchloride of iron, the same catastrophe may ensue. Is it more likely to ensue? Very careful observations are required before this question can be answered in the affirmative. People are apt to think that cold water is so simple a thing that it cannot do any harm. But if it cannot do any harm, is it not probable that it is, under the conditions discussed, equally powerless to do any good? Harmless remedies, as a rule, fail in great emergencies. Now, cold water fails not because it is harmless, for the shock and depression which it causes are extremely dangerous; but it fails because, nervous power being exhausted, it cannot excite uterine contraction, and it has no other virtue in arresting hæmorrhage.

Here then it is that styptics come to the rescue. The emergency is extreme, and would be desperate but for the new power invoked. If blood be still running, it is instantly seized at the mouths of the vessels, which become sealed up by coagula. It also constringes the inner surface of the uterus, and thus further closes the vessels. The system then has time and opportunity to rally, and by-and-by the contractile power returns. In estimating the relative value, then, of cold water and perchloride of iron, we must reflect that iron acts and saves life when water is inert or injurious. If occasionally death follows, and is apparently accelerated by the iron injection, we have, on the other hand, to remember that it was used as a last resource, when the patient was likely to die even if nothing were done, and that even under these unpromising conditions *many lives, to all appearance doomed, have been saved.*

The great lesson to learn is to take courage to use the styptic in time; that is, before the vital power has sunk too low. It was not to be expected that a remedy powerful enough to save under the last extremity should be altogether free from danger. But Dr. Barnes has seen so many women bleed to death, and has seen so many saved by the timely use of the iron injection, that he is much more afraid of the bleeding than of the remedy.

In some cases there is reason to believe that the iron enters the uterine vessels. He has known intense pain in the uterus follow imme-

diately on the injection. How is this explained? If blood were present in the vessels, it is a chemical necessity that contact with the iron would cause coagulation. He infers, then, that in some cases the vessels are for a time nearly empty; and that there is a certain amount of suction-action induced by the relaxed state of the uterus, and by the lateral or semi-prone position of the patient. He would therefore urge that the patient be placed on her back, and that the uterus be grasped firmly between the two hands of an assistant during the injection.

In some cases, it is easy to carry a swab of sponge soaked in the iron solution into the uterus. In this way probably some of the risk attaching to injection is avoided. The persulphate of iron, which is preferred by our American brethren, may have its advantages. Its styptic force is probably greater. It may be used in the form of one part of the liquor ferri persulphatis of the *British Pharmacopœia* to six or eight of water. The proper strength of the perchloride solution is one in ten.

Art. 253.—*On Intra-Uterine Medication in the Treatment of Chronic Uterine Catarrh.*

By W. S. Playfair, M.D., F.R.C.P., Professor of Obstetric Medicine in King's College.

(*The Lancet*, January 11.)

In this paper Dr. Playfair describes the various methods of applying remedies to the interior of the uterus.

It is evident, he says, that by this expedient any topical remedies that we deem suitable can be very effectively and readily applied to the uterine mucous membrane; but due care should be taken both in regard to the mode in which the injection is made, and the nature of the solution or other material injected.

It has been said that if the cervix were first dilated with laminaria or sponge-tents, or with graduated metallic bougies, bad results need no longer be feared. But Dr. Playfair remarks, to treat effectually an old-standing case of uterine leucorrhœa we require to renew our applications at intervals for weeks or months. To suppose that, under any circumstances, it would be justifiable to repeat the dilatation of the cervix, say once a week, is an absurdity, since this is in itself a formidable operation, apt to be followed, even when most carefully done, by serious inflammatory mischief. If then dilatation is an essential preliminary to intra-uterine injection, as by common consent it seems to be, that method of treatment is at once put out of court in cases of uterine catarrh, although it may still be admissible in other conditions, such as menorrhagia, where frequent repetition is not necessary. The danger of intra-uterine injection has suggested the application of various solids to the uterine mucous membrane. Sir James Simpson occasionally employed for this purpose fine intra-uterine pessaries, made of some soluble material with which nitrate of silver or sulphate of copper was mixed. Dr. Braxton Hicks also uses points made of sulphate of zinc, which are passed into the cervical canal and allowed to melt

there. Dr. Thomas, of New York, recommends medicated tents of sponge, of sufficient size to fit the cervix, and saturated with various alterative applications, such as nitrate of silver, tannin, or the like. The use of sponge-tents is strongly recommended by Dr. Emmett and others, as in itself of great value in certain conditions of chronic hypertrophy of the cervix, combined with a granular state of its villi. Various contrivances have been invented by which nitrate of silver in substance may be applied to the uterine mucous membrane, such as melting it over the extremity of a uterine sound, or passing through a stick of it a fine platinum wire, by means of which it is passed through the cervix. Another expedient of the kind is one very strongly advocated by Prof. Courty, of Montpellier, who states that he has never failed to cure every case of uterine catarrh, however obstinate, that he has had under treatment. It consists in passing into the cavity of the uterus a small piece of solid nitrate of silver which is allowed to remain there. The caustic gradually melts, mingles with the uterine discharge, which Courty supposes prevents any undue irritation of the parts, and gradually flows over the entire mucous membrane. Certain precautions are insisted on in using this application, principally that several days should have elapsed since the entire cessation of the menstrual period, the absence of any flexion of the uterus which might prevent the escape of the discharge saturated with the melted caustic, and the absence of any marked congestion or irritation of the uterus.

Dr. Playfair is of opinion that it would be difficult to imagine anything more apparently violent in its action than this. The natural objection to it is that it is a coarse mode of treatment, and one of which we cannot control the action. In addition to this there seems to be some risk of producing induration and contraction of the cervical canal, a result which has been said to follow even the repeated use of a solution of nitrate of silver. For these reasons he has not himself practised it, but the high estimation in which it is held by so eminent a gynæcologist as Courty, and the assurance he gives us that a large number of his pupils have constantly used it with success, prove that the application of the caustic itself is not followed by the serious consequences many have feared.

Mr. Clay, of Birmingham, has recently proposed to medicate the interior of the uterus by means of the insufflation of powders. He combines the remedial agent with finely powdered wood charcoal. The powder is introduced by a special instrument contrived for the purpose.

The last mode of intra-uterine medication is by using fluid applications—such as tincture of iodine, a solution of nitrate of silver, chromic acid, and the like—which are applied to the uterine mucous membrane by some contrivance which admits of its surface being covered by the application without any amount of fluid being left in utero. This method of painting over the diseased surface is, to Dr. Playfair's mind, by far the safest and most effectual we can employ. One of the earliest and strongest advocates of this method is Prof. Miller, of Louisville, U.S, who claims, and apparently with justice, to be one of the earliest advocates of systematic intra-uterine treatment, inasmuch as he practised and taught it so early as 1854.

Art. 254.—*On the Treatment of Post-Partum Hæmorrhage.*

By Heywood Smith, M.D.

(*Medical Times and Gazette*, March 1.)

At a meeting of the Obstetrical Society of London, February 5th, Dr. Heywood Smith related a case illustrating the treatment of post-partum hæmorrhage by the intra-uterine injection of the perchloride of iron. The patient was admitted into the British Lying-in Hospital on January 26th, 1872, and delivered that day by a pupil midwife of a male child, after a labour of twelve hours. The placenta came away easily in twenty-five minutes. Third day: The patient complained of severe pain in the hypogastrium. Tenth day: Hæmorrhage occurred. Eleventh day: Hæmorrhage continuing, a solution of one part of strong liquor ferri perchloridi to eight of water was injected. Sixteenth day: Bleeding continuing the injection was repeated. Eighteenth day: The uterus was again injected with iron (one in four), and again on the twentieth day with equal parts of the liquor ferri and water. The twenty-first day strong liquor ferri was injected into the uterus with an intra-uterine syringe holding about two drachms. This produced severe pain, but completely stopped the hæmorrhage, which never amounted to flooding, but oozed continually of a bright red colour. Twenty-third day: The patient was delirious, and discharge brown and offensive. Twenty-fifth day: Had occasionally great dyspnœa, and picked at the bedclothes. Twenty-eighth day: Died. The uterus was removed, and examined by Dr. Snow Beck and the author. It was nearly five inches long and four inches broad, and its walls three-quarters of an inch thick. Its anterior and posterior surfaces were marked with black streaks; the tissue was soft, but otherwise apparently healthy. Its inner surface was covered with a dark reddish-black fluid, and at the junction of the upper third with the lower two-thirds was a depression stained black. Near the centre of it an artery hung out more than one-eighth of an inch. Near the depression, and fitting into it, was a rounded mass of placenta about the size of a small filbert. A small portion of the end of an artery showed the free extremity slightly puckered, its margins rounded, and the canal unobstructed. The author believes this case teaches us:— 1. That post-partum hæmorrhage happening after complete contraction of the uterus, and therefore after the uterine sinuses have been emptied of blood, is evidently arterial. 2. That when a solution of the perchloride of iron is injected into the uterus, the sinuses take it up and carry it into the veins; the tissues also immediately surrounding the sinuses become stained. 3. That the perchloride of iron does not produce contraction, nor, by coagulation of blood, blocking of the orifices of the uterine arteries. 4. That the perchlorlde of iron is a styptic, the use of which in the cavity of the puerperal uterus is not innocuous.

Dr. Routh thought great credit was due to Dr. Heywood Smith for bringing forward this unfavourable case. He had suspicions that the injection of iron was not so innocuous as believed. Some time ago he called in Dr. Barnes to assist him in treating a case of post-partum

hæmorrhage, in which Dr. Barnes injected a solution of the weak tincture of steel and water in equal parts with the desired effect. On the third or fourth day puerperal fever set in, and, in spite of all treatment, the patient died. He did not say the death was due to the injection, but he thought it might be so. In Dr. Heywood Smith's case no mention was made of the complete escape of the fluid injected; perhaps some had been retained. If so, the symptoms might be due to retention of the fluid giving rise to peritonitis rather than to the nature of the fluid injected.

Dr. Graily Hewitt stated that he had seen one case where the perchloride of iron injection had been used to restrain hæmorrhage, and the patient had subsequently died. A solution (one in four) of the tincture was injected, and restrained the bleeding. After three days pain set in, the lochia became arrested, and the patient died from puerperal peritonitis and other grave complications, five weeks after delivery. Whether this result was in any way due to the action of the iron was a question.

Dr. Braxton Hicks thought the injection which Dr. Heywood Smith had used was too strong, and that it would have been well in his case to have dilated the cervix for the purpose of investigating the interior of the uterus. He had employed the perchloride of iron injection a great number of times, and had made inquiries largely amongst those who had also used it, without having seen or heard of any serious result. The only case in which he had seen any trouble was one of severe flooding after twins. The injection was used with complete success. Twenty-four hours after pains arose, and it was found that the uterus contained hard, blackened coagula which it could not expel. These were broken up, and washed out, and the patient did well. He believed pyæmia might result from depression after severe hæmorrhage where no injections or perchloride of iron had been used.

Dr. Sell, of New York, said that his experience regarding the use of perchloride of iron was obtained at the University of Vienna, which could boast of from 7000 to 9000 deliveries annually. There its use in post-partum hæmorrhage was the treatment upon which they relied, provided ergot and injection of cold water did not arrest the bleeding. A weak solution of the ferrum sesquichloridum (℥j ad aq. lb. j) was gently injected, and repeated till the hæmorrhage ceased. He had never seen any bad results from this treatment.

Dr. J. J. Phillips, while admitting that there were certain dangers connected with the injection of a solution of perchloride of iron, believed there was no valid argument against its use in suitable cases. He had used it several times, and death had occurred only in one case, which he could not in the least degree connect with the use of iron. He generally diluted the liquor ferri perchloridi (not the strong one) with about half its bulk of water.

Dr. Playfair said that he should much regret if the case brought before the Society should have the effect of throwing doubt on the safety of astringent injections in severe cases of post-partum hæmorrhage. He had used the perchloride of iron in many cases, and only once unsuccessfully; nor had he ever seen any evil consequences. Dr. Heywood's Smith's case was one of secondary hæmorrhage caused by

the presence of a piece of retained placenta; and the strong undiluted liquor ferri perchloridi had been injected—a proceeding which Dr. Barnes had not sanctioned.

Dr. Snow Beck stated that he had met with several cases where death had followed the injection of perchloride of iron into the gravid uterus to arrest post-partum hæmorrhage, all the women presenting symptoms quite analogous to those known under the name of puerperal fever. It was now ascertained the hæmorrhage only occurred when the uterus was relaxed. This relaxation allowed the canals of both the arteries and the veins to remain open when the blood was poured out from the arteries, and any styptic injected was too often taken up by the veins, conveyed into the general system, and caused the certain death of the individual. This had always been verified on the post-mortem examinations he had been permitted to make. He believed the usual means employed to promote contraction of the uterus were all sufficient for the purpose provided they were used efficiently. It was a mistake to say they required the presence of any supposed "nerve force," as the uterus was comparatively isolated from the general system, had an independent action of its own, and to produce complete contraction the remedies—except the ergot of rye—ought to be effectively applied direct to the organ itself. When this was done there was no necessity for any new power in the form of styptics injected into the uterine cavity. Where the local stimulus of cold or the introduction of the hand was not sufficient, sponging or swabbing the inner surface with any astringent would induce contraction, expel the hand with all coagula, and, by closing both the arteries and the veins, stop the hæmorrhage and prevent any injurious absorption. In secondary hæmorrhage occurring after the first week after abortion, &c., where the walls could not be induced to contract, further sponging or swabbing the inner surface with an astringent was every now and then required. But it was very necessary to afterwards wash out the cavity each day, to remove any injurious matters, and to prevent deleterious absorption.

Dr. Bantock had used the injection of perchloride of iron but once, in a case of accidental hæmorrhage occurring within a fortnight of the natural term of utero-gestation. The injection produced severe pain in the hypogastrium. To relieve this, nepenthe to the amount of a fluid drachm was administered, but the pain increased in severity until she died, seven or eight hours afterwards. He believed death in this case must be attributed to the injection of the iron. At the same time, he would not wholly condemn the remedy because one fatal case had occurred. He believed compression of the uterus if intelligently performed was a sufficient preventive and curative measure in most cases of post-partum hæmorrhage.

Dr. Wynn Williams considered that the injection of solutions of perchloride of iron into the cavity of the uterus was accompanied with considerable risk. His method of applying it differed from that of Dr. Barnes. After having emptied the uterus of all clots, he swabs the interior of the uterus with a sponge saturated with tincture of perchloride of iron and water (equal parts). Should the sponge not be expelled by the contractions of the uterus thus set up, it is left, a string

being attached to it. He believed this to be a safer proceeding than that recommended by Dr. Barnes.

Dr. Protheroe Smith said that although the use of the perchloride of iron as an intra-uterine remedy post-partum could not be considered free from danger, he nevertheless regarded it as a valuable remedy when others had failed to arrest the fatal issue. He thought some of the dangers of the use of iron might be overcome by using instead the undiluted tincture of matico, and he strongly commended this powerful styptic to the notice of the Fellows of the Society, with a view further to test its efficacy as a valuable remedy in post-partum hæmorrhage.

Dr. Hayes thought it probable that the cause of death in the case mentioned by Dr. Bantock was more due to shock than to the iron injection.

Dr. Holman had experienced many practical proofs of the safety and efficacy of perchloride of iron injections in post-partum hæmorrhage. He never went to a labour without carrying the remedy and the means of using it with him, and he was convinced that he had, by the use of it, saved lives which would otherwise have been lost. He did not employ it until all the other usual methods had been exhausted.

Dr. Edis had seen a case of secondary hæmorrhage occurring ten days after delivery, in which an injection of equal parts of the tincture of perchloride of iron and water failed to restrain the hæmorrhage. Death being imminent, he injected an ounce of the pure tincture, and left it in. The patient slept well after it, and had no pain or inconvenience, and her life, he believed, was saved by it. He had used pure tincture in several other cases with marked success.

Dr. Rogers believed that the injection of iron should only be had recourse to when other means had failed. He had injected the pure tincture of steel for post-partum hæmorrhage in seven cases with immediate good results, and in only one had any serious after-consequences followed. This case recovered. As a *dernier ressort* he thought the injection of iron ought to be tried, but perhaps the plan advocated by Dr. Wynn Williams might be the safer way of using the styptic.

Dr. Playfair asked Dr. Snow Beck how many cases of death resulting from the injection of perchloride of iron he had personally seen. It would be interesting to the Society to know, inasmuch as many Fellows had repeatedly injected the iron without ever witnessing any bad results; while he, who confessedly had never used the remedy himself, had had the bad fortune to witness several fatal cases.

Dr. Snow Beck answered that he had seen nine or ten cases. The symptoms were similar to those of puerperal fever, but he felt convinced that death was caused by the injection of iron.

Dr. Barnes said it was eminently desirable that everything that could be urged against the practice of arresting post-partum hæmorrhage by injecting perchloride of iron should be stated, but there was little hope that the spirit of criticism which was so strong in Dr. Beek would ever be exhausted. Dr. Barnes believed this question was to be decided, not by *à priori* anatomical closet speculations, but by experience at the bedside. Dr. Beek, admitting he had never used the remedy or seen it used, laboured by ingenious anatomical argument to prove that the perchloride of iron *could not* cause the uterus to contract or close the

arteries. The simple answer was that it did both, and did it effectually. He had often had his hand in the flaccid, bleeding uterus to clear out placenta and clots, and felt the inner surface of the uterus contracting, corrugating, crinkling under the contact of the iron as it flowed, stopping the bleeding and expelling the hand. Dr. Beck had laboured to prove that the uterus was an isolated organ, independent in its action from the nervous centres. Dr. Barnes could not agree with him. A thought would cause the uterus either to contract or dilate. If this physiological fact were at variance with Dr. Beck's anatomy, he feared Dr. Beck's anatomy must be wrong. Dr. Beck asserted that ergot, cold, galvanism, and pressure were sufficient to arrest hæmorrhage, but such an opinion could only be entertained by those who had seen but little practice in difficult midwifery. Dr. Barnes had seen many women bleed to death after all these means had been used unsuccessfully by men as skilful as any in that room. Dr. Bantock's case was one which had given him great anxiety, and he had been much disposed to interpret it as Dr. Bantock had. Certainly, the pain must be attributed to the injection, but it did not follow that it was the cause of death. The prostration was already extreme, and the fatal termination was, as had been pointed out by a previous speaker, probably due to shock. In extreme exhaustion from bleeding, a very slight cause was often enough to extinguish the patient's life. Dr. Routh's case was one of septicæmia, for which he certainly could not blame the perchloride. Flooding predisposed powerfully to septicæmic fever. It frequently occurred when no styptic injection had been used. Dr. Barnes added that it had struck him as a remarkable fact in this, and also in the preceding discussion, that those who condemned most warmly the practice of injecting iron solutions to arrest hæmorrhage were men who had at most seen it used once, whilst it had been emphatically approved by men whose experience was greatest and who had used the remedy frequently. Nothing could be truer than Dr. Holman's description of the risk run by delicate, pampered women who become exhausted by the mere effort of bringing forth a child. In those cases where the uterus could not be made to contract, where he could not rely upon reflex excitation, when grasping the uterus must at length be abandoned, then it was that the perchloride came in as a new power to save life in the last extremity. He felt deeply his responsibility in advising the use of a remedy which to many seemed dangerous. But the conviction he had acquired—that he had saved many lives, otherwise doomed, by this practice—was too deep to permit him to hesitate in continuing to pursue it, or to urge others to do the same. When all ordinary remedies were ineffectual, should we look on passive, folding our hands behind us, or turn upon our heels, and let the woman die?

Dr. Murray wished to add his testimony as to the value of perchloride of iron. He had used it in ten cases in which the various ordinary means had been tried and had failed to arrest the hæmorrhage. He considered delay in using the iron far more dangerous than the employment of it.

Dr. Savage stated that he had never met with a case of post-partum hæmorrhage rebellious to the old-fashioned practice, and many obstetricians were opposed to iron injections. Groundless alarm had

probably in many instances led to their premature use, and the overlooking of Dr. Barnes's own reservation—viz., to use the perchloride as a last resource. If he were ever induced to have recourse to the perchloride he would use a strong solution, taking care to prevent premature contraction of the cervix. The plan of Dr. Wynn Williams he believed to be founded on the true principle.

Dr. Heywood Smith, in reply, said he was glad to find that the case he had brought forward had proved so full of interest to the Society. He did not regret having done so. Every new therapeutical agent should be fairly investigated, and the results published, whether they be favourable or otherwise. Though many had spoken against the intra-uterine injection of iron, on the whole the balance of opinion that night was in its favour. He wished it to be distinctly understood that the lesson he had tried to deduce was, that though the intra-uterine injection of iron might be a suitable remedy in cases of *primary* hæmorrhage, it was not so in *secondary*. He maintained that after the process of involution and absorption had commenced it was unwise to inject into the uterus anything which being absorbed might prove deleterious. Dr. Heywood Smith also wished to draw attention to the fact that at the British Lying-in Hospital, since he had made it a rule that every patient should have ergot after her labour is over, to insure the proper contraction of the uterus, there had been much fewer cases of puerperal mischief. He begged to thank the Society for the attention they had given to his paper.

Art. 255.—*On the Treatment of Parametritis Puerperalis by Corrosive Sublimate.*

By Dr. P. Gossmann.

(*Berliner Klinische Wochenschrift*, No. 34, 1872; *Schmidt's Jahrbücher*, No. 12, 1872.)

In the winter of 1871–72 a succession of serious puerperal affections, especially parametritis, was met with in the gynæcological clinique of Professor Spiegelberg. No local cause could be discovered, and all that remained to be done, therefore, was the prophylactic proceeding of placing pregnant and lying-in women under as favourable conditions as possible. Whether the labour had been difficult or light seemed to have no influence upon the course of the lying-in; those with whom a difficult labour necessitated active and sharp treatment generally remained healthy, whilst those with whom parturition had taken a normal course were generally seriously, and in some cases fatally, affected. Of some twenty cases of severe parametritis Dr. P. Gossmann has published two, which ran their course without any complications:—

"A woman, aged twenty-four years, and in her second conception, was, at the normal termination of a pregnancy which had run its course without any disturbance, delivered in between four and five hours of a healthy child. This was not nourished by the mother, whose breasts were then slightly compressed. Between twenty and thirty hours after delivery the patient was attacked with rigors, and afterwards became intensely

feverish. In the evening the pulse was 120, the temperature 39° 7 C., and the patient complained of much thirst, loss of appetite, and pain in the iliac regions. Under the lax abdominal wall could be felt the swollen and very painful broad ligaments, extending from the sides of the uterus to the sides of the pelvis. Ten leeches were applied, and subsequently cataplasms. Bichloride of mercury was administered every hour in doses of 0·01 of a gramme. No improvement on the following morning; the pills and local application of cataplasms still continued. In the evening the pulse was 124, and the temperature 40°·3; several stools passed during the night. On the next morning the condition of the patient was much better; so long as she remained quiet the abdomen was free from pain. Much pain, however, was caused by a thrombus which had formed in the middle third of the large saphenous vein; pulse 84, temperature 38°·0. On the following day the patient was doing well; the administration of the mercury was now discontinued. Two days subsequently the abdomen was free from pain, even on pressure; the exudation was much less in quantity, and the patient's appetite had returned. On the eleventh day from the commencement of the attack the patient was discharged as cured.

"A strong primipara, aged twenty-three years, was normally delivered after a labour lasting for seventeen hours, in the course of which the perineum was deeply lacerated; this wound was closed immediately after the delivery by three vaginal and three rectal sutures. The administration of laudanum in ten-drop doses twice daily was sufficient to prevent defæcation. On the second day the patient suffered from a severe fit of rigors, which was followed by fever; the whole of the inferior abdominal region became swollen and tender; infiltration of the broad uterine ligaments could be made out on both sides; pulse 136, temperature 40° C. The treatment was similar in all respects to that carried out in the previous case. In the evening the pulse was 124, and the temperature 39°·5. During the next two days there was no marked change in the state of the patient; the bichloride was then discontinued, but after twelve hours again administered, as the exudation had increased. On the following day the fever relaxed. This, then, under the same treatment, ran a similar course to the fever manifested in the first case. The administration of the bichloride was continued for four days, and then given up. Some days later there was a second attack of fever, which, however, disappeared in the course of a few days. The intra-abdominal exudation, which at first had extended about a hand's breadth above the anterior wall of the pelvis, could not be felt on the fifteenth day from the commencement of the illness, and the patient was then discharged cured.

"In neither of these cases was salivation produced, or any symptom of disturbance of the stomach or intestinal canal.

"All the other cases of parametritis, alone or associated with metritis, came in the same way, and under the same treatment ran a similar course. When the affection commenced on one of the first five days after delivery the first attack of fever was very intense, but on the fifth or sixth day of the illness the pulse and temperature were reduced to their normal standard, even though the exudation persisted, which it generally did until between the tenth and fifteenth days. All the lying-

in women who had been attacked so early after delivery were all to be discharged as cured before the seventeenth day, those cases only being excepted in which the parametritis resulted in fœtal peritonitis. The attack, when it did not come on before the seventh day, lasted for three or four weeks, and at the end of this period cicatrized cords and resistent structures about the womb could be felt through the vagina. Whenever, after the suspension of the bichloride of mercury, the stools were irregular, ten drops of laudanum were administered in the evening, and a tablespoonful of castor oil on the following morning. The application of cataplasms was continued until the exudation could no longer be made out. In some mild cases the bichloride was not given, the treatment consisting in the application of leeches and cataplasms, and the administration of laxatives. These cases did well, but still neither the febrile phenomena nor the exudation passed away so quickly as in cases where the bichloride had been administered. In two or three cases it was necessary, on account of salivation and profuse diarrhœa, to discontinue the bichloride, even though it had been given in small doses. In the great majority of cases, on the other hand, no severe salivation nor troublesome diarrhœa occurred. The bichloride, when administered at the commencement of the illness, shortened the course of the parametritis and favoured the disappearance of the exudation."

Art. 256.—*Two Cases of Purulent Peritonitis terminating in Rupture of the Umbilicus, and Recovery.*

By Dr. Baizeau.

(*L'Alger Médical*, No. 1 ; *Gazette Hebdomadaire*, No. 16, 1873.)

"The subjects of these cases were two children, one aged twelve and the other ten years. Both were suddenly attacked without appreciable causes by intense fever, with vomiting and abdominal pain and swelling. They presented all the signs of generalized peritonitis and went through the phases of this affection, which more than once threatened to terminate fatally. One of the patients had not only to struggle with the peritoneal affection, but was also successively attacked by pneumonia, purulent pleurisy, and suppurative parotitis.

"In this patient an opening formed at the umbilicus about two months after the commencement of the inflammation of the peritoneum. Shortly afterwards it was found necessary to open the chest in order to give exit to effused pus. A drainage tube was placed in the right pleural cavity and another in the abdominal cavity, and through these solutions of iodine were injected. The tubes were allowed to remain for eleven months. After their removal the patient rapidly regained strength, and has never since suffered from any disturbance either in the chest or abdomen.

"The other patient was not so seriously affected ; the progress of the inflammation was more regular without being much less threatening. The umbilicus opened in the same manner and gave exit to thin greenish pus containing flocculi. The purulent secretion speedily diminished after establishing drainage and injections of lukewarm water, and there was

complete recovery six weeks after the perforation of the umbilicus. The affection lasted for three months only, and, as in the former case, left no traces.

Art. 257.—*On Junod's Boot as a Remedy in some Forms of Leucorrhœa.*

By E. Garrett-Anderson, M.D.

(*Practitioner*, December, 1872.)

In cases of sudden suppression of menstruation from cold or nervous shock where the more ordinary and semi-domestic remedies have failed, and where the distress from cerebral congestion is great, Junod's apparatus promises to be of use, either as a palliative or as a cure. Essentially it is a dry-cupping on a large scale. The leg is enclosed in an air-tight case, and the air exhausted over it. The result is that for the time the capillaries and vessels of the leg enlarge, more blood remains in the limb, and the circulation in other parts is proportionately relieved. It has the great merits of not interfering with other treatment, of being quite painless, and so easily regulated as to be practically harmless, and of being applicable to young girls. Dr. Garrett-Anderson has tried it in two cases, and in each the return of the menstrual flow appeared to be the result.

Art. 258.—*A Case of Rigid Os treated by Hydrochlorate of Apomorphia.*

By Alexander Milne, M.D.

(*Transactions of the Edinburgh Obstetrical Society.* Sessions 1869–70–71. 8vo, pp. 455. Edinburgh.)

The subject of this case was in labour with her fourth child: os size of sixpence after three or four hours active pains: little progress made in next two hours; chloroform; attempt to dilate with the finger; two grains of tartar emetic resulting in nausea and vomiting; twenty-five minims of liq. morph. hydrochlor. were successively resorted to, but without improvement. A solution containing one-quarter gr. of hydrochlorate of apomorphia was next resorted to, the patient having been in labour about eighteen hours. In ten minutes the patient vomited, the os was soon found to yield, the pains increased in force, and in a few minutes delivery was accomplished. Dr. Milne does not claim that this rapid result establishes the value of the last remedy used, as the effect might have followed from the combination of medicines employed; but thinks the apomorphia well worthy of a trial in similar cases, until its true value is established.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 259.—*On Constipation in Infancy.*

By Dr. ALVIS MONTI.

(*Wiener Medizinische Presse*, xiii. 26–28, 1872; *Schmidt's Jahrbücher*, No. 10, 1872.)

The author regards as the causes of the obstruction so frequently met with in infants insufficient development of the intestinal muscular structures, the peculiar nutrition and mode of life of children during the first year of life, and the length of the descending colon, especially the sigmoid flexure. Through this the fæces lose their semi-fluid consistence and form firm masses, consequently the act of defæcation, which in and by itself ought not to be preceded by any effort, becomes difficult, and is associated with colicky pains; these pains come on sometimes before defæcation, sometimes periodically and independently of this act; in the latter case meteorismus occurs, which on its side leads to symptoms of dyspepsia. The colicky pains may be owing to reflex spasms, especially in children affected with congenital hydrocephalus, microcephalus, cranio-tabes, rhachitis, or intense anæmia. As results of the distension in difficult defæcation atony and paralysis are often met with. In connexion both with temporary and habitual constipation dysuria frequently occurs.

The author goes thoroughly into the etiology of infantile constipation, and gives the following as its causes:—

1. *Mechanical impediments:—*

(*a*) *Congenital malformation of the intestine* (congenital partial and total imperforation or stenosis of the rectum): Retention of the meconium with consecutive symptoms of intestinal obstruction.

(*b*) *Acquired mechanical impediments:* Strangulation of a hernia or invagination of a portion of the intestine, fissure of the anus, acquired atresia ani, and partial stenosis of the rectum.

2. Failure in nutrition through congenital malformation of the lips or fauces, through sore nipples or an insufficient secretion of milk on the part of the mother or nurse, and through weakness of vital power on the part of the suckling child.

3. *Faulty nutriment:* Too much casein and too little fat in the milk, or too frequent sucking at the breast; in feeding by hand, unsuitable or insufficient nutriment; bad milk or a too early supply of starchy food.

4. *Loss or diminution of the peristaltic movements of the intestines:* Atrophy of the intestinal canal, with meteorismus or rickets, or after long-continued diarrhœa.

5. *Diminution of the intestinal secretion* after lingering affections resulting from anæmia.

Intestinal obstruction is, moreover:

6. Symptomatic of diseases of the brain and spinal cord;

7. A result of deficiency of fluid nutriment, of the use of astringents, of the presence of ascarides, fruit seeds, &c.

8. In grown children a result of want of exercise.

Treatment.—This will vary according to the cause of the contraction,

but one should not only remove the accumulated fæces, but also prevent a return of the accumulation. In order to attain the former it suffices with young children to administer small and frequently repeated doses of rhubarb, syrupus rhamni catharticæ, and other mild purgatives. Clysters are useful only in cases where a speedy relief of the bowels is required. Suppositories are not of use in cases of habitual constipation.

The causal treatment is indicated by the above scheme of the conditions on which constipation in children may depend. In cases of failure of the peristaltic action of the intestines the author recommends cod-liver oil, to be taken internally, and clysters of cold water. In cases of prolonged disease of the intestine, especially in grown-up children, mineral waters are indicated, such as Marienbader Kreuzbrunnen, Franzensbader Salzquelle, and others. For anæmic children Gleichenberger and Franzensbader waters are recommended in daily doses of 30 grammes for patients under two years old; of from 60 to 100 grammes for those above this age. The mineral water should be taken on an empty stomach.

Art. 160.—*On Oxide of Zinc as a Remedy for the Diarrhœa of Infancy and Childhood.*

By David J. Brakenridge, M D., F.R.C.P.E., Extra Physician to the Royal Hospital for Sick Children, Edinburgh.

(*Medical Times and Gazette*, Feb. 15.)

During the last three years Dr. Brakenridge has carefully tried various methods of treatment in many hundreds of cases of diarrhœa of infancy and childhood at the dispensary of the Edinburgh Royal Hospital for Sick Children. Before he had proceeded far in the study of the disease he became convinced that the nervous system played a much more important part in its production than was generally attributed to it. He believed, therefore, that it could only be safely and successfully combated by a method of treatment which, while it took into account the condition of the alimentary secreting surfaces, acted principally upon and through the nervous system. Whether the considerations on which he was thus led to select a remedy, and by which he accounts for its action, are right or wrong, the value of the remedy itself remains unaltered.

These may be briefly stated as follows:—First, the disease depends chiefly on a weak and too impressionable state of the nerve-centres presiding over alimentary secretion. Secondly, it is correlated to convulsions and other spasmodic diseases. Thirdly, it is accompanied by hyperæmia of the secreting surfaces of the alimentary canal. To meet these indications we must have a remedy, which is—firstly, tonic; secondly, antispasmodic; thirdly, astringent.

In the oxide of zinc we have these three properties happily combined. First, as a tonic, it has been said to be to the nervous system what iron is to the blood. Its usefulness in the analogous condition of profuse sweating is well known. Secondly, as an antispasmodic, it is deservedly held in high estimation, and has been found frequently to

effect a cure in convulsions and other spasmodic diseases. It may, therefore, be depended upon to prevent the occurrence of those nervous diseases which stand correlated to diarrhœa as the alternative results of such irritations as dentition, worms, &c., and which may supervene on the rude stoppage of a diarrhœa by astringents. Thirdly, its astringent properties are well known.

Dr. Brakenridge has given the oxide of zinc in several cases of the diarrhœa of phthisis, occurring in the child, with rapid and marked benefit.

From a limited experience of its use in the diarrhœa of enteric fever, he anticipates that its employment in that condition will prove successful.

The oxide of zinc may be given in a mixture with mucilage and water, to which a little glycerine may sometimes be added with advantage.

Art. 261.—*On Lymphoma.*

By Arthur Gamgee.

(*British Medical Journal*, Feb. 1.)

At a meeting of the Medico-Chirurgical Society of Edinburgh, December 18th, 1872, Dr. Arthur Gamgee read a paper entitled "Cases of Lymphoma observed in the Royal Hospital for Sick Children, with commentaries clinical and pathological." He began by discussing the relation of leucocythæmia and lymphoma to each other. He traced the history of our knowledge of lymphoma, from the observations of Hodgkin, from whom it was called Hodgkin's disease, to those of Virchow, Bright, Addison, Wilks, Murchison, and Burdon-Sanderson. Hodgkin's disease is a lymphatic anæmia in its essence, an enlargement of lymphatic glands with formation of secondary deposits. Virchow was the first carefully to study this, and to work it out to a true hyperplasia of the lymphatic glands, which secondarily spread to contiguous tissues, and even infiltrated the neighbouring parts. Dr. Gamgee related at length the clinical history of cases, of one of which the following is an outline:—J. R., aged five, was taken ill apparently of a low fever, was admitted to hospital in two months, and died within four months from the beginning of her illness. She had a tumour in the anterior mediastinum, and excessively hypertrophied cervical and mediastinal glands. The presence of the mediastinal tumour produced many curious lung-symptoms, but the lungs were found absolutely healthy. The blood was deficient in red corpuscles, but there was no increase in the number of white cells. When in hospital she was torpid and feeble; she was treated by vinum ferri, good food and stimulants, but without benefit. Before death the enlarged glands greatly diminished in size. At the necropsy the tumour was found to be the thymus much enlarged. It was adherent to the diaphragm, and projected more to the right than to the left side. The spleen and liver, as well as the lungs, were perfectly healthy. The enlarged glands were simply hypertrophied, no abnormal deposit being present. Sections of the different tumours and glands were shown under microscopes. Dr. Gamgee pointed out the abnormally rapid progress of

the case. In the absence of secondary deposits, it resembled a case of splenic leucocythæmia. This case also proved the occasional origin of lymphoid tumours in this situation in the thymus gland.

Art. 262.—*On the Treatment of Tubercular Meningitis.*

By Dr. Joseph Bierbaum.

(*Journal für Kinderkrankheiten*, Heft 8–9–10, 1872; *Gazette Hebdomadaire*, No. 8, 1873.)

"1. Moderate local bleeding will sometimes be advantageous in cases of tubercular meningitis attacking infants who have previously had apparent good health. In those cases, on the other hand, where the affection has been preceded by lengthy prodromata, an effusion of blood will often do more harm than good. Repeated local bleedings are very rarely salutary, and they should never be abundant.

"2. The application of cold compresses to the head is preferable to that of bags filled with ice or snow, and merits every confidence in the first stage of the disease, and even at the commencement of the second. At the later stages this treatment becomes uncertain or useless.

"3. Blisters are preferable as cutaneous revulsions to tartar-emetic ointment and to other kinds of irritants.

"4. Calomel has as yet proved itself the most sure remedy, and is indicated in all stages of the disease. It should be presented in fractional doses, care being taken to prevent salivation.

"5. If the febrile action be intense, nitrate of soda will be found useful at the commencement, whilst acetate of soda will render greater service in the more advanced stages of the affection.

"6. Laxatives are not indicated except when there is constipation, intestinal derivatives are pernicious, and drastics should be absolutely banished.

"7. Nitrate of potash may be used in small doses in the advanced stages of the affection; although but little confidence is to be placed in the efficacy of this medicinal agent.

"8. Tartar-emetic, under any form, should be rejected. Digitalis, squills, and other diuretics are not useful; and the same may be said of diaphoretics and baths.

"9. Narcotics, especially opium and its derivatives, have generally but very little efficacy, and ought also to be rejected.

"10. Antispasmodics merit very little confidence; at the most one may have recourse to pure oxyde of zinc, in order to combat the convulsions.

"11. Tonics may be administered only in the stage of convalescence. Finally, the sulphate of quinine may be administered with advantage during the decline of the malady."

Art. 263.—*Scarification of the Gums.*

By J. Lewis Smith.

(*Treatise on the Diseases of Infancy and Childhood.* Philadelphia, 1872.)

Dr. Smith says that the gum-lancet is now much less frequently employed than formerly. It is used more by the ignorant practitioner, who is deficient in the ability to diagnosticate obscure diseases, than by one of intelligence, who can discern more clearly the true pathological state. Its use is more frequent in some countries, as England, under the teaching of great names, than in others, as France, where the highest authorities, as Rilliet and Barthez, discountenance it. It is well to bear in mind the remark of Trousseau, that the tooth is not released by lancing the gum over the advancing crown. The gum is not rendered tense by pressure of the tooth, as many seem to think; for if so, the incision would not remain linear, and the edges of the wound would not unite as they ordinarily do by first intention within a day or two. If there be no symptoms except such as occur directly from the swelling and congestion of the gum, the lancet should seldom be used. The pathological state of the gum which would without doubt require its use, is an abscess over the tooth. As to symptoms which are general or referable to other organs, as fever and diarrhœa, the lancet should not be used if the symptoms can be controlled by other safe measures. All co-operating causes should first be removed, when, in a large proportion of cases, the patient will experience such relief that scarification can be deferred. If the state of the infant be such that life is in danger, as in convulsions, or there be danger that the infant will be permanently injured or disabled, as by paralysis, every measure which can possibly give relief should be employed without delay. In these dangerous nervous affections, therefore, the gums, if swollen, should be lanced.

Art. 264.—*Treatment of Infantile Syphilis.*

By M. Blachez.

(*Thesis on the Treatment of Syphilis.*)

M. Blachez considers the important question whether pregnant women who are syphilitic should be treated with mercury ought to be settled in the affirmative. He cites M. Depaul's results as demonstrating a greatly reduced mortality in the infant from this practice (which is nearly universal in this country). M. Depaul states that, out of two hundred and four cases of pemphigus in still-born children, he found only one case distinguishable as of syphilitic origin. Favourable results of mercurialization of the infant through the mother's milk are cited, as well as of the ordinary methods of inunction, the administration of bichloride, and of the mercurial solution of Van Swieten.

Art. 265.—*On the Primary Dentition of Children.*

By Francis Minot, M.D., Harvard.

(*Boston Medical and Surgical Journal*, January 2, 1873.)

Dr. Minot in speaking of the diarrhœa complicating teething during hot weather, recommends the common chalk mixture, with the addition of one-fourth part of tincture of kino, which increases its astringency, and also keeps it from turning sour in hot weather. If the diarrhœa be not stopped by this mixture, one drop of laudanum may be added to the dose, but not oftener than three times a day, in children under two years old. Diarrhœa is most apt to attack children who are brought up on the bottle; hence if the case be urgent and does not yield to treatment, a wet nurse should be procured if possible. When this cannot be done, he would strongly recommend the methods of preparing the milk with arrow-root and gelatine, found in the treatise on Diseases of Children, by Drs. Meigs and Pepper. Brandy is very useful to a teething child exhausted by diarrhœa, which should be given once in three or four hours, or oftener in urgent cases. The dose is ordinarily from five to twenty-five drops, given in milk; but if there be much prostration the physician need not fear to increase the amount.

Art. 266.—*Spinal or Essential Palsy of Children.*

By M. Rosenthal.

(*Centralblatt f. d. Med. Wissenschaften*, No. 11, 1872.)

M. Rosenthal, in the fifty-second number, 1871, of the *Oesterreich. Zeitschr. f. Prakt. Heilkunde*, observes that atrophy and malformation of the anterior cornua of the spinal cord, as first pointed out by the French pathologists, are the chief pathologico-anatomical alterations met with after death in the so-called spinal paralysis of children. According to M. Rosenthal, the atrophy of the nerve cells of the grey-substance is not so much the primary morbid change, as the enlargement and thickening of the blood-vessels observed by him, signs of an active participation of the latter, in the diseased action going on, a pathological process which in its progress becomes the cause of the waste, or even entire destruction, of the grey substance of the brain. In opposition to the views of Duchenne, M. Rosenthal has observed that improvement may take place in the motility of the paralysed muscles, even though the lost Farado- and galvanic excitability of the muscles be not again restored.

Within the first six to nine months from the commencement of the attack, and hence beyond the eventual failure of the electrical excitability of the muscles, still is the prognosis not to be considered unfavourable.

In two cases of the essential paralysis of children reported by Damaschina, there was likewise evident lesion of the vessels of the anterior cornua of the spinal cord. It would appear that the last-named gentleman, as well as Duchenne, is inclined to view this abnormal condition of blood-vessels as the primary cause of the paralysis.

APPENDIX.

Art. 1.—*On Chlorozone.*

An article professing to be a fluid of greater potency both as a deodorizer and as a disinfectant than any other at present in general use, and bearing the name of "Chlorozone," has recently come under our notice. It is essentially a permanganate so combined with chlorine, or a chlorinated alkali, that nascent oxygen and chlorine are simultaneously available. Both of these elements are well reputed oxygenating agents, and as there is no reason for imagining that either in any degree lessens the value of the other, we should imagine upon *à priori* grounds that this invention would be an exceedingly valuable one.

This opinion is borne out by the favourable testimony to its merits afforded by Dr. Noad's report, in which it is stated that "it is superior to Condy's permanganate both as a deodorizer and as a disinfectant, its action being longer sustained." This conclusion, which Dr. Noad states he arrived at after a "series of experiments," affords very strong presumptive proof of the excellence of "chlorozone."

We are informed that this fluid is already in use in several hospitals, &c., and that in no case has any fault been found with its effects. The constituent chlorine, whilst in a loose state of combination, is yet so easily capable of exerting its destructive power upon putrescent or putrescible bodies as to be practically free, though the solution, however much diluted, does not possess any tendency to spontaneous decomposition, which would inevitably be the case if the chlorine were merely in solution, instead of being, as it is, in conjunction with an alkali.

To all who have any requirement for a good disinfectant, having a slight chlorine-like odour, we can recommend a trial of the "chlorozone," feeling assured that it is equal to if not the best among the many now in use. That it is perfect we have no wish to assert, but neither is any of its compeers; and those who have experienced the want of a stronger and more efficient fluid disinfectant than those ordinarily employed will find at least a satisfaction in following our recommendation with respect to "chlorozone." We may add that it is claimed for this invention that it is the cheapest disinfectant in the market.

Art. 2.—*On the Convulsive Diseases of Women.**

By Robert Barnes, M.D., Obstetric Physician to St. Thomas's Hospital.

(*Medical Press and Circular*, May 14, 21, and 28.)

The Lumleian Lectures were this year delivered by Dr. Barnes, who took for his subject "The Convulsive Diseases of Women."

* Lumleian Lectures delivered at the Royal College of Physicians.

In the course of the first lecture Dr. Barnes said:—

"The Father of Medicine, a great intellect, himself might master all the Medical science of his age; but such a comprehension has never fallen to the lot of his posterity. Grasping what he did, and epitomizing it for future ages, one can imagine the old seer, inspired by the vastness of his thoughts, seeking to embody in one pithy and pregnant formula his prescient estimate of the wonderful growth of the art which he practised and taught.

"How far that clear intelligence, or the still brighter genius of Harvey, who practised midwifery, would have approved the actual, minute and still proceeding subdivision of Medical practice, it is now useless to speculate. It is hopeless for any one man so to practise, and so to study, all the branches of medicine as to combine harmoniously, and profitably for science, the diverse materials that would accumulate upon him. He would be crushed under the overwhelming load.

"There is nothing to be done, then, but to distribute the work amongst many workmen; and on all suitable opportunities to call them together to aid in building up the ever-rising, but never-to-be-completed, Temple of Medicine.

"Yet it must surely strike those who reflect, that subdivision of Medical practice may be carried out to an injurious, even to an absurd, extent. The true Medical mind will always refuse to look upon any one organ of the body as anything more than a dependent part of a whole. But the public seems to grow less and less reasonable upon this subject every day. I have recently been honoured by a visit from a lady of typical modern intelligence, who consulted me about a fibroid tumour of the uterus; and lest I should stray beyond my business, she was careful to tell me that Dr. Brown-Séquard had charge of her nervous system; that Dr. Williams attended to her lungs; that her abdominal organs were entrusted to Sir William Gull; that Mr. Spencer Wells looked after her rectum; and that Dr. Walshe had her heart. If some adventurous doctor should determine to start a new speciality, and open an institution for the treatment of diseases of the umbilicus—the only region which as my colleague, Mr. Simon, says is unappropriated—I think I can promise him more than one patient.

"The fragmentary way in which medicine is studied, more especially in this town, undoubtedly interposes a serious barrier to the advancement of true knowledge. And it is not difficult to see that it acts injuriously upon the Medical mind, disposing those who too exclusively study one branch to underrate the merit, and even honesty, of those who study a different branch. This extreme splitting-up of medicine renders almost impossible the attainment of a full perception of pathology, or even of the import of any disease or symptom. It destroys the very idea of correlation, of the mutual reaction of different organs, and of the modes by which all the organs may be affected by one common condition.

"There are three epochs, or rather stages in the life of woman, at which she exhibits special proclivity to nervous diseases marked by convulsion. In the first stage, that of infancy, the proclivity is common to both sexes, but more marked in the female. The peculiar state of the

nervous system in infancy, its preponderant development, its special susceptibility to emotional and physical irritation, is intimately connected with the wants of a rapidly developing organism. The next stage of proclivity to convulsion begins with the advent of menstruation, and terminates with the cessation of that function. This stage, of course, includes, and is continuous with, that of sexual life or reproductive capacity. It is during this stage that the proclivity to convulsive action is the most strongly marked. The third stage runs almost imperceptibly on from the second. It is difficult to draw a sharp line of demarcation between them. Theoretically, however—that is physiologically—the two stages are distinct. The third stage begins with the decay of the reproductive capacity, and is prolonged for an indefinite period, ranging from one or two to five years, or more, but is seldom prolonged into the age of senility.

"This third stage may be called the stage of aberrant nervous action. During the two earlier stages the nerve-force is employed, except when disordered by morbid influences, in the work of definite functions. These functions being at an end, and the organs by which they were performed undergoing the involution of decay, there follows a period of anarchy, during which nerve-force, no longer finding useful employment, goes astray in every direction, provoking the wildest and most extravagant manifestations. By-and-by, the stage of adaptation or re-adjustment arrives; the nerve-force generated finds appropriate occupation, and all settles down into comparative order and calm.

"During all the three stages of life marked by convulsive proclivity there is an exalted degree of emotional sensibility. We might even generalize further, and affirm that emotional sensibility proceeds *pari passu* with the convulsive liability. Almost always co-existing, it might be said that the two conditions are convertible into each other. Certainly it may be said that each will often excite the other. Nothing is more common than for an emotion which, under ordinary circumstances, would be completely controlled by the subject, to evoke a fit of hysterical, epileptic, eclamptic or vomitive convulsion, when the nervous centres are in a state which we may describe as *convulsive tension*. And on the other hand, if the convulsive fit be excited by reflex irritation, it is almost surely followed by an exalted degree of emotional sensibility.

"It further deserves to be noted here that emotion takes a large part in every act or process of the generative function. In short, emotional affectability is the measure of convulsive liability.

"To show how nearly an expulsive labour-pain is allied to convulsion, we have but to observe the course of a pain towards the end of labour. A premonitory shudder, the forerunner of the storm, often a rigor, often vomiting, usher in the pain, just as we frequently observe before the outbreak of a fit of epilepsy. Women have told me that at this moment they felt sure they were on the verge of convulsion. From the moment that the uterine contraction begins, voluntary power to stop the action ends; the patient may, indeed, give intensity to the effort by adding the force of voluntary effort, but she can hardly lessen it. And in a true expulsive pain, she is even unable to withhold the aid of the voluntary muscles. This may seem contradictory; but the fact is, that at a certain point the expiratory muscles, which are usually

under the control of the will, cease to be so. The glottis is closed; the chest-walls are fixed; the expiratory muscles contract powerfully; the muscles of the neck compress the veins. There is, as in epilepsy, trachelismus; black blood circulates, or is delayed, in the brain. Delirium or temporary unconsciousness supervenes. The resemblance to epilepsy is, for the moment, so close that the two conditions can hardly be distinguished. If in such a case a dose of ergot be given, the convulsive character is so intensified as to make the resemblance even closer still. The ergotic contraction may last for ten or even twenty minutes; it is almost tetanoid in its character. Under the strain it puts upon the lungs I have seen universal emphysema occur, spreading from the neck; and the strain upon the vessels may cause rupture and extravasation, apoplexy; and this even when no ergot has been given. This is the history of some cases of sudden death in labour.

"How can we account for that enormous supply of nerve-force by which the work of parturition is effected? It is hardly an exaggeration to say that, in many women, there is a larger expenditure of nerve-force in the execution of this function, all spent within a few hours, than they have ever before expended upon muscular exertion for weeks and months together. For many women, the day of childbirth is the only day's hard work they have ever known. What does this imply? It seems to me to be a physiological necessity that to generate the inordinate supply, a corresponding development, a physiological hypertrophy, analogous to that which takes place in the heart, should take place in the spinal cord. This hypothesis is based purely upon physiological and clinical inductions; and Dr. Barnes has no anatomical data upon which to support it. In the ordinary condition, the healthy correlation of resisting power, of irritation, and of nervous energy is so harmoniously preserved that all works in an orderly circle. But to disturb this correlation, and the nervous energy is wasted or misapplied. What are the chief causes of disturbance? Clinical facts show them to be: 1. Altered conditions of the blood; 2. An hereditary or acquired peculiarity in the nervous centres.

"Both of these conditions need not co-exist; one of them is enough.

"To bring together the factors which combine to produce a fit of puerperal eclampsia, we find them to be:

"1. Accumulated irritability of the nervous centres, the product of an altered state of nutrition induced in them by pregnancy, so as to provide a due supply of nerve-force for the work of the uterine muscles and the muscles auxiliary to the uterus.

"2. An eccentric stimulus usually conveyed from the uterus to the nervous centres; calling these into action.

"When these two factors only exist, a healthy labour may result.

"3. But a new factor may be superadded. An example of this we find in that peculiar state of the blood which is marked by albumen in the urine. The blood is literally poisoned. When this toxæmic condition exists in pregnancy, two things are always threatening: the one is premature labour, the other is eclampsia. Either event may be the first in order, each may provoke the other. It has been commonly sup-

posed that labour is the immediate cause of the convulsion. But this is only true in a limited number of cases. At any moment a pregnant woman, the subject of albuminuria, may be seized with convulsion without the slightest evidence of an initiatory attempt at labour. The fact is, that the poison in the blood, intensifying the irritability of the nervous centres, disposes them to respond by a storm of nervous energy on any excitation; and thus to anticipate the normal advent of labour. A third, and a negative result may happen, which it will be convenient to dispose of at once. The pregnancy may continue to term, and no convulsion may occur. This event was stoutly denied by the late Dr. Lever, who was one of the first, if not the first, to establish the connexion between albuminuria and puerperal eclampsia. But absolute, universal dogmas in medicine are dangerous. They are probably always wrong.

"Analysing the history of fifty-three cases of puerperal eclampsia, of which I have preserved notes, I find that in sixteen the convulsions broke out without any antecedent sign of labour; labour being an epiphenomenon caused by the convulsion, or induced by the Medical practitioner. I believe it is scarcely possible for eclampsia to break out, and for the pregnancy to go on. One of two things will almost certainly happen: first if not delivered, the cause of the toxæmia persisting, the convulsions will be continued and prove fatal by exhausting the sufferer by shock or by direct lesion of the brain; or secondly, labour will be induced by the circulation, or stagnation, in the nervous centres and uterus, of blood charged with excess of carbonic acid. Such blood acts, as Marshall Hall and Brown-Séquard have shown, as a direct stimulant to muscular contraction. Under its influence—and I am not now speaking from the authority of these great physiological experimentalists, but from my own careful clinical observations—the convulsion occurs first; one feels the os uteri perfectly closed, and no uterine contraction. Presently when one or more fits have occurred, when black blood is circulating, uterine action begins. Once started, the nerve-storm seizes the uterus as well as the voluntary muscles; the sphincters relax, the os uteri dilates, and the labour proceeds.

"It is only thus that we can account for the large proportion of cases in which labour comes on prematurely at six, seven, or eight months of gestation.

"I have, however, seen a case in which uræmic eclampsia broke out in the eighth month, and the pregnancy went on to term.

"I have said that the convulsion may be the immediate cause of labour. The converse is also true. Labour may be the immediate cause of the convulsion. Uterine action, with or without the pressure of the head upon the irritable neck of the uterus, acts as an excitor of convulsion. In a certain proportion of cases, the first fit follows upon the dilatation of the cervix and the contact of the head with the os uteri. The influence of uterine action may be clearly traced. After a fit there is a period of comparative calm, marked probably by stertor, coma, and mental unconsciousness. We hope that the calm will continue; but, presently, we see the patient writhing uneasily as if from abdominal pain; placing the hand upon the abdomen we feel the uterus

contracting; and then a fit breaks out again. This order of events may be repeated several times. So long as the uterus is quiet there is no fit.

"We may test the effect of uterine irritation more directly still. We may ourselves apply the irritation by touching the os uteri with the finger for the purpose of examination, or with the view of accelerating the labour. In many cases a convulsion immediately follows.

"And this is an observation I have often made. It is at times necessary to pass the catheter. So great is the nervous tension, so lively the irritability of the nervous centres, that the merest touch of the vulva induces such resistance—albeit the patient's mind is unconscious—that it may be impossible, without the aid of chloroform, to pass the instrument. Nor is the hyperæsthesia limited to the genital organs. The whole surface of the skin is irritable to an astonishing degree. It is a common impulse from which some Medical men are not free—to seek to exorcise the fits by dashing cold water on the face, by applying blisters and sinapisms to the neck or calves. A fit is too often the consequence. Irritation of the skin, especially the sudden impression of cold upon the face or chest, by its action upon the respiratory nerves, is a pretty sure way to provoke a fit. I have seen the jar, the shaking of the house, caused by a heavy carriage passing along the street, produce a fit. And when the stage of coma is passing off when consciousness is returning and with it emotional susceptibility, almost any mental impression will act like a physical shock; and again a fit is produced.

"But convulsion in pregnancy or labour may occur without albuminuria. In this case we must invoke an equivalent *tertium quid*, something which lends intensity to the normal physiological erethism of the nervous system. This something may be another kind of blood-affection, or it may be some altered condition of the nerve-substance associated with the strumous or syphilitic diathesis, or some indefinable hereditary taint.

"In another order of cases, the outburst of convulsions is deferred until the natural term of gestation. Here we may suppose one of two things: either the albuminuria did not begin until near this term—and this is probably often the case,—or, existing for some time before, the induced irritability of the nervous system was not intense enough, or the stimulus was wanting to start the convulsions. This latter hypothesis is also often true. For albuminuria may exist, beginning in mid-pregnancy, and go on to the end without necessarily inducing either convulsion or labour.

"I have offered the conjecture that the blood-change indicated by albuminuria may arise rapidly, even suddenly. The observations must be very rare in which the urine, being free from albumen one day, has been found charged the next. Naturally, the urine is not examined unless there is a present pathological indication."

In his second lecture Dr. Barnes illustrated in a most graphic manner the law of augmented centric nervous irritability. This he stated thus:

"When the nervous centres are in a state of exalted tension, irritation telling upon whatever part, of the brain through the emotions, or of the

cord through reflex action, seems liable to spread and involve the whole cord. And if one part, as in pregnancy, be especially irritable, this part will be excited to its special action. Or we might express it in another way. We may imagine the spinal cord to be a conductor along which an impression made at any point is transmitted rapidly to the rest, testing and calling into action any part which is in an especially excitable condition."

"Although there is no condition to parallel that marked by albuminuria in the proclivity to convulsion, yet we find other conditions which strongly predispose to similar outbreak. The very difference in nature of these conditions supplies further evidence of the truth of the fundamental law, that in pregnancy there is a special and intense accumulation of nerve-force."

The relations of epilepsy to pregnancy were illustrated by six cases. Two cases of Chorea in Pregnancy were related. It was next remarked "that the relation between a fit of ague and convulsion is too striking to be overlooked. Pregnancy and labour seem to exercise the same influence in causing a relapse as they do in the case of chorea."

Analysing these cases, amongst other lessons which they teach, Dr. Barnes gave the following:—

"1. There is the fundamental state of nervous tension or erethism due to pregnancy and labour.

"2. There is a degraded state of the blood, often vaguely called anæmia, but which is more strictly a form of toxœmia.

"3. In some cases to a degraded state of the blood is added a morbid diathesis, which in all probability involves a peculiar organic modification of the nervous centres.

"4. Then there comes an emotional or physical shock, or a peripheral irritation, which, acting upon a system prepared to explode, determines the convulsion.

"Thus, in Case 1 there was a syphilitic diathesis—a condition well known to be capable of evoking or leading up to epilepsy in men. But in this case labour was necessary to determine the convulsions.

"In Case 2 epilepsy followed on the exhaustion produced by suckling. It is in cases of over-suckling that we see most strikingly the influence of exhaustion—say, of anæmia. The thin blood, deficient in red globules, can hardly afford proper nourishment to the nervous centres. But the term "anæmia" or "spanæmia" imperfectly describes the kind of blood-impairment found in these cases. Dr. Barnes observed that blood which, from its poverty, is incapable of nourishing the organs, and of stimulating them to the adequate performance of their functions, necessarily soon becomes contaminated by excrementitious matters. Spanæmia then implies toxæmia. Excretion is always imperfectly performed. Almost any animal poison in the blood seems to possess the property of unduly exciting the nervous centres. There is hardly a fever which does not manifest evidence of cerebro-spinal irritation, by delirium, or by that form of connvulsion known as *subsultus tendinum*. The poison of spanæmia is different from the specific poisons of fevers; but, like them, it irritates the nervous centres, and, like them, it is likely to cause various irregular, involuntary muscular actions, recognised as spasms, cramps, twitches. Returning to epilepsy provoked or evoked by over-suckling, Dr. Barnes

said the case was a type of a considerable class. The mother goes through perhaps one or two pregnancies and lactations without serious ailment; but under repeated wear and tear, as in this case, at the third lactation, she breaks down. The blood is degraded, the nervous centres are ill-nourished; but, the function of lactation going on, there is maintained an inordinate centric irritability. Under these conditions, convulsion is near at hand. If there be present a convulsive diathesis, it is pretty sure to break out. If she have at any time been "subject to fits," it is almost certain that they will reappear now. That convulsions should occur, even where they had never occurred before, and where we can trace no evidence of convulsive diathesis, affords very strong presumptive evidence of the independent adequacy of the conditions we are discussing to produce them.

"Lactation, like pregnancy, imposes upon the mother the double duty of supporting two beings, implying a corresponding increase of nervous energy. Nor is this all. Throughout this work, of itself sufficient to tax the mother's powers to the utmost, the ovarian stimulus is commonly acting. In married women especially, the ovaries can hardly be kept in abeyance. They are always struggling to renew the cycle of the function of reproduction. The effort at ovulation frequently determines menstruation in spite of lactation; and even where the blood-flow—the outward manifestation of ovulation—does not occur, there is reason to believe that ovulation more or less complete goes on. This state, added to the excitation of the sexual act, causes a constant renewal of exaggerated cerebro-spinal irritability. Hence it is that we see, in some cases, a periodical recurrence of epileptic fits, although there may be no visible menstruation.

"Protracted lactation apart from ovarian excitement is not nearly so likely to lead to nervous exhaustion or to convulsion or insanity. Thus, it is no uncommon thing for women who lose their husbands whilst they have a child at the breast to go on suckling for an indefinite time. Concentrating all their emotional and other nervous expenditure upon this vicarious duty, the ovaries are kept in subjection; and there is no excessive development of spinal irritability." Dr. Barnes has known poor women, badly fed, hardly worked, continue to suckle for two, three, and even seven years, exhausted, it is true, in strength, but free from convulsions or insanity. The nervous diathesis was wanting.

"Still it is in pregnancy, when the tension of the nervous centres is at the maximum, that we see the most striking proclivity to epilepsy."

A most interesting case was related by Dr. Barnes as illustrating, in several repeated series of experiments instituted by Nature, almost all the points upon which he had dwelt, and which he thus summed up:—

"1. There was probably an hereditary predisposition to nervous disease.

"2. She never had fits unless when pregnant, except during the ten months between her eighth and ninth pregnancies, when she had a slight fit at each monthly period.

"3. The menstrual or ovarian nisus produced fits, shown by periodicity of recurrence during lactation and pregnancy.

"4. She had fits during the climax of coition, but never except when pregnant. This last fact or experiment affords striking evidence of the

increased efficacy of irritation during the inordinate spinal erethism of pregnancy.

"5. The increasing preternatural irritability of the spinal cord is manifested in the repeated abortions following the first pregnancy.

"6. These abortions and the protracted lactations induced a gradual blood-deterioration, the effect of which culminated after six years of reproductive troubles, in the first epileptic fit during the nervous tension of pregnancy.

"The urine, examined at four different times, never showed any signs of albumen. The case was one of pure epilepsy.

"Although, as in this case, epilepsy will frequently excite abortion, it is not nearly so likely to bring on labour as eclampsia, showing that the blood-poison in the latter case is a special cause in augmenting the irritability of the nervous centres."

Turning to the subject of *vomiting in pregnancy*, Dr. Barnes said "that up to a certain point it seems to fulfil a useful physiological purpose. It is usually the first evidence of the cerebro-spinal erethism produced by pregnancy. Its action may be compared to that of a safety-valve discharging the superabundant nerve-force, which might otherwise result in convulsion, abortion, or other mischief. Its constant occurrence in the morning seems to imply that at this time there is a maximum of central nervous irritability, so that comparatively slight peripheral causes will then act with more effect. The immediate irritating cause he believes to be the stretching of the uterine muscular fibre under the eccentric pressure of the growing ovum, and the turgescence of the uterine vessels. In many cases, after three or four months the balance is restored, and the vomiting either ceases or is so moderate as to be easily tolerated. It is remarkable, however, that in not a few cases vomiting appears to set in almost from the moment of conception. These cases may be explained by the facts—(1) that conception has taken place, as it most commonly does, at a menstrual epoch—that is, when there is an exalted central nervous tension; (2) by the stimulus or irritation of coition."

Three groups of cases were separately considered. The first group—comprising cases of severe vomiting within the first three months—includes cases of women who have borne several children, as well as primiparæ; although probably the primiparæ are the majority. In these, the preponderating condition is the extreme convulsive tension of the nervous centres. The subjects are generally "nervous," susceptible to emotional and physical impressions. In some there are predispositions of a kind similar to those which operate in the production of convulsions. In some, and this may be especially predicated of those women who have already borne children, there is probably blood-deterioration. Sooner or later, indeed, blood-deterioration supervenes; but the influence of this factor does not appear to be necessary to produce vomiting in primiparæ in the first month.

In the second group—including cases of continuous vomiting increasing in severity—the initial conditions are those which mark the first group. But very soon another condition arises: obviously, continuous vomiting implies impaired or arrested nutrition. The influence of this seems to be to increase the irritability of the nervous centres. It is a matter of observation that if the strength can be roused the susceptibility

is diminished. But this is not all. The condition is not simply the negative one of want of nutrition. If food be not supplied from without, the starved system feeds upon itself. Absorption goes on actively. The proceeds of tissue-change find their way into the blood, and empoison it. At this point the danger is extreme. The blood-poison still further increases the irritability of the nervous centres; it oppresses the brain; delirium supervenes; and utter prostration is at hand. Every fit of vomiting acts as a shock, and leaves the system more open to the next attack. At this point the slightest emotional impression, the gentlest touch on the skin, the offer of food or drink, will act as they will upon the sufferer from tetanus. At this stage diarrhœa is not uncommon. It bears further evidence of toxæmia. The indications of danger are—extreme emaciation; a pulse small, easily put out, exceeding 130 in the minute; hollow, staring eyes; hippocratic aspect; and delirium. Dr. Barnes has not seen a patient recover in whom the last symptom had persisted for a few days, supervening on the rapid pulse. The vomiting may now subside; even premature labour may take place; but the patient will sink notwithstanding.

In some cases, and the observation applies particularly to these first two groups, the urine is albuminous.

In the third group—that in which the vomiting becomes obstinate in the latter stages of pregnancy—the etiology becomes clear. The explanation offered by Dr. Barnes is this:—

"Normally, the uterus *grows pari passu* with the development of the embryo. The adaptation is so well balanced that there is no strain. But if the contents of the uterus be suddenly augmented, the harmony of correlation is destroyed. The uterus cannot suddenly grow to keep pace with the eccentric pressure within. Its fibres are stretched, in some cases torn, and vomiting results. Stretching of the uterine fibre is enough to cause vomiting, even where there is no pregnancy; *à fortiori* it is enough when the irritability of the nervous centres is exalted by pregnancy."

In comparing some of the common features of resemblance or of relationship between the different forms of convulsive disease which occur in pregnancy, Dr. Barnes says, "we ought to include the relationship of syncope, vertigo, migraine, apoplexy, paralysis, delirium, insanity. They often form links of one chain or of different chains. Syncope and vertigo should be studied in their frequent relations to epilepsy; apoplexy in its occasional relations to uræmic eclampsia; paralysis in its relations with apoplexy and epilepsy; and insanity in its relations with epilepsy, eclampsia, and chorea." Dr. Barnes said, "all these diseases, or symptoms, or pathological results, must be studied together in order that their true individual and cognate significance may be understood," and leaving aside the deeply-interesting subject of puerperal insanity in its more usual forms, he called to mind that "all the convulsive diseases may culminate in mania or dementia.

"What is it then that determines epilepsy in one case, vomiting in a second, chorea in a third, tetanus in a fourth? We must of necessity invoke a peculiar antecedent condition of the nervous centres, lying dormant, probably quite unknown or unsuspected, until it decares itself under the magical ordeal of pregnancy. In the case of epilepsy this is almost

certainly so, and this is proved by those cases in which the subject had previously been known to be epileptic herself, or to have come of epileptic parents. That pregnancy should reproduce epilepsy in those known to be predisposed to it is strong presumptive evidence that there has been a similar predisposition, although hitherto latent, in those in whom epilepsy appears for the first time during pregnancy.

"In the case of chorea this dormant morbid something is even more clearly proved. In a considerable majority of the cases in which chorea has broken out in pregnancy the disease had existed in childhood. Pregnancy could only be regarded as a renewing cause.

"But the postulate of an antecedent condition is most indisputably settled by the case of ague. We cannot conceive the possibility of ague being evolved solely out of the conditions of pregnancy. We know that other debilitating causes may also act in reproducing ague in persons who have once been under the influence of the paludal poison.

"But it is not so clear that an antecedent predisposing cause is necessary to the production of eclampsia or obstinate vomiting or tetanus. In some cases of eclampsia, at any rate, it has been impossible to trace a history of convulsive affection, or to establish hereditary taint; whilst, in many instances, the convulsion has begun and ended with one particular pregnancy, the recovery being perfect, and leaving no mark of special nervous diathesis behind."

As to obstinate vomiting, though more common in women of known so-called nervous or susceptible temperament, Dr. Barnes has not been able in some cases to make out any presumable nervous proclivity.

The influence of loss of blood in producing convulsions has often been dwelt upon, and an essential factor has been thought to be found in anæmia, but Dr. Barnes thinks clinical observation will not support this hypothesis, at least not in its general application.

As to convulsions he said:—"The convulsive movements sometimes, but by no means constantly, observed in subjects dying from hæmorrhage differ materially in character from the ordinary epileptic fit. The observations of animals bled to death have only a limited application. Yet it appears to be chiefly from such observations that the advocates of this theory have drawn their conclusions.

"Probably few practitioners who do not practise obstetrics, and not even, it appears, many of these, have seen several cases of bleeding to death. It has been my fortune to see a considerable number. In most of them death was preceded by general tremor, a kind of universal shuddering; consciousness was sometimes not abolished, and in none was there trachelismus or congestion of the face. There was often vomiting, always distressing dyspnœa, and the pulse was rapid, scarcely felt or even extinct. These signs constitute a picture differing essentially from convulsions.

"In all these convulsive disorders the nutrition of the nervous centres is affected by some abnormal state of the blood; but the abnormal state is not the same in all. In epilepsy, in chorea, in hysteria, and, up to a certain stage, in vomiting, the alteration probably consists chiefly in that degradation which results from the impoverishment caused by excessive demand, and in the empoisonment of defective

excretion. In eclampsia, supervening upon this, there is undoubtedly a special empoisonment by the elements of urine.

"For the evolution of any of these convulsive disorders the development of a peculiar tension of the vis nervosa seems to be a fundamental condition. For, unless pregnancy supervene to produce this peculiar condition, neither epilepsy, eclampsia, vomiting, nor chorea would, in most cases, ever appear."

We pass now to the consideration that the rise of convulsive diseases in pregnancy puts to the test the various theories respecting the genesis of these diseases. This theme the learned lecturer thus treated :—

"Many are the theories, and discordant, of the pathogeny of epilepsy, of chorea, of tetanus, and of hysteria. Now, be these essential conditions what they may, anæmia, congestion, change of structure of the nervous centres, embolism, pregnancy must produce them all, and all must vanish suddenly with labour. Are these conditions so created and so disposed of? Great as I believe the pathogenic potency of pregnancy to be, I cannot go so far as this. We cannot, at any rate, admit that a gross structural change in the nervous centres is of the essence of epilepsy or chorea, when we see complete recovery ensue as soon as the pregnancy is over.

"We are then driven to conclude, with Voisin and others, that the visible alterations found in the brain and cord, in persons who have died of epilepsy or chorea, are consecutive on, not antecedent to, the disease.

"In a memoir I wrote some years ago on 'Chorea in Pregnancy,'* I adduced reasons for concluding that the graver symptoms — the paralysis, the mania, death—were produced by the repeated shocks of convulsion.

"No one who has watched a case of puerperal convulsions, or of obstinate vomiting, or tetanus, or who has himself experienced the torture of sea-sickness, can have failed to observe how each repetition of the fit weakens the power of resistance, rendering the nervous centres more and more susceptible to those impressions which started the affection. This increasing susceptibility is obviously the result of shock, aggravated no doubt by exhaustion from want of food.

"In the case of tetanus it can hardly be questioned that the fatal prostration is almost purely the result of the repeated shocks. The blood-poison, if any exist, and I believe it does, mainly acts by increasing central nervous irritability; it scarcely complicates the problem; and the mind often remains singularly clear. In uræmic convulsions, again, notwithstanding the complication with blood-poisoning, the effect of shock is clearly seen in the exhaustion following the fit, in the general muscular resolution, in the relaxation of the sphincters, and in the gradual return of nervous power during the intervals, under the influence of rest. I have seen almost sudden death in labour which could be ascribed to no other cause than the shock of pain, and the convulsive action of the uterus. In some cases of paraplegia arising in labour it seems reasonable to attribute the paralysis to exhaustion or shock upon the spinal cord. It is certain that some of these cases cannot be accounted for on the theory of pressure upon the nerves in the pelvis.

* Obstetrical Trasactions, 1868.

"It is greatly by the influence of shock that I would account for the cerebral disorder which so often attends the progress of puerperal convulsions, of epilepsy, and of chorea. The fits act as repeated shocks which stun the nervous centres. These shocks are equivalent to concussions. The *ictus epilepticus* is as real a blow as the apoplectic stroke. They exhaust and divert the nervous force, and after a time impair the nutrition of the nervous substance.

"In the case of chorea proceeding to mania, we have to note that the cerebral disease is almost always *secondary and progressive.*

"In cases of puerperal mania breaking out after labour, where there has been no convulsion, it may seem that some other factor than shock must be invoked. In some of these cases there is albuminuria: that is, there is blood-poisoning; and this may be taken to be the chief factor. But in other cases there is no albuminuria. But in all there is the shock of labour, with its attendant exhaustion, its severe physical and psychical revolution, acting upon the nervous system wrought up to a climax of irritability. It seems to me that convulsions, collapse, insanity, are not, indeed, interchangeable or convertible, but that the issue in any one of these conditions is determined by the idiosyncrasy, or antecedent peculiarity existing in the nervous centres."

Dr. Barnes opened the third lecture with a consideration of convulsive diseases in the non-pregnant state, pointing out that "the ovaries are now again in the ascendant, and that the phenomena of menstruation are not unlike those of pregnancy. During pregnancy, the seat of the highest vascular activity is the uterus; the ovaries and breasts are greatly though not absolutely, in abeyance. During lactation, the breasts exert, or should exert, the supremacy; but, as we have seen, the ovaries are constantly striving to regain the predominance of which they have been temporarily deprived.

"When lactation is over, the reign of the ovaries is undisputed. Such phenomena, then, as we have seen to take place during pregnancy, we may expect to find reproduced during menstruation. And this deduction is amply justified by clinical experience. The chief point of difference lies in the fact that menstruation does not occasion those marked changes in the constitution of the blood which play so important a part in the history of pregnancy. We may, then, expect to find in connexion with pregnancy the more purely reflex nervous phenomena, minus especially the eclampsia which is so intimately dependent upon uræmia.

"In obstructed or morbid menstruation a fit of epilepsy or of hysteria, according to the constitution of the patient, may explode. If the organic predisposition be strong, such a fit may break out under the simple irritation proceeding from the ovaries, and their appendage the uterus. That is, it does not appear to be necessary to postulate an attendant unhealthy condition of the blood, although such condition is so frequently present at the onset of menstruation.

"Dysmenorrhœa commonly includes two factors. There is first, in many instances, difficulty in the performance of the proper ovarian function, mal-ovulation, or, to coin a more expressive term, *dysootocia.* This is a prime cause of pain. The other factor is the disturbance in the secretion and excretion of the menstrual blood, the proper function

of the uterus. Impeded secretion and excretion almost infallibly entails disorder in the quantity of the discharge. Menorrhagia is a frequent attendant upon dysmenorrhœa; and in many other cases the flow is deficient. But there is another condition which has attracted less attention, but which is not less real. Dysmenorrhœa, in a large proportion of cases, implies retention of some portion of the secreted blood in the cavity of the uterus. This adds uterine pain to ovarian pain, doubling the force of the irritation, and introducing a new element of blood impairment. Retained blood is liable to undergo a degree of decomposition, and hence to be a source of toxæmia. Thus we may have, and very frequently do have, as the consequence of dysmenorrhœa, a double degradation of blood going on, through hæmorrhage or loss, on the one hand, and through empoisonment by absorption of foul matter, on the other.

"Todd said no nervous disorder is more certainly due to blood disorder than hysteria; and Briquet says the influence of defective hæmatosis over the nervous susceptibility is nowhere more evident than in the action which chlorosis exerts over the economy, and in the predisposition to hysteria which results from this action. Out of 430 hysterical patients he found 152 in whom chlorosis existed in a marked manner before the appearance of hysteria. This is quite true so long as we regard the blood-disorder as simply a provoking cause.

"The like explanation or statement will apply with equal point to neuralgia, which, in the large majority of cases in women, is produced by dysmenorrhœa and other ovario-uterine disorders attended by pain and exhausting discharges, which induce degradation of the blood and therefore morbid nutrition of the nervous centres, and increased susceptibility to external impressions.

"If it be true that dysmenorrhœa, menorrhagia, leucorrhœa, and other ovario-uterine disorders lead to blood disorder which so often precedes the outbreak of convulsive and other nervous diseases, it follows logically that we ought to begin by removing, if we can, these debilitating and irritating causes. By doing this we may often succeed in restoring the nervous system to the *status quo ante morbum;* thus proving the correctness of the observation that the utero-ovarian diseases produced the nervous disorders.

"It must be remembered that ovulation is a distinct function from that of menstruation. Menstruation is the outward indication of the ovarian process; but it is not a necessary consequence. It is not always coincident in time. It may not take place at all. The ovarian nisus may begin a week or more before the menstrual flow. And it is the ovarian nisus which is the chief cause of the central nervous erethism, and which at the same time supplies the centripetal irritation. This is no *petitio principii* invoked to bring apparent exceptions within a general law. There are abundant facts to prove this proposition familiar enough to those who observe closely the phenomena of the ovario-uterine functions.

"The periodical action of the ovarian nisus is frequently observed in the arousing or exacerbation of mania, delusions, and other insane phenomena, in the inmates of lunatic asylums.

"The climacteric perturbation is often even more severe and more

marked than what is observed at any previous period of life. Thus many women may have passed through the trials of puberty and of child-bearing without serious nervous disorder, and will break down at the menopause. Often, no doubt, this is the climax, the last ounce of a long troubled sexual life. Exhausting labours, consequent uterine disease, the cares incident to the rearing of a family, tell at last so that when the irregular and futile efforts which mark the close of sexual life are made, the nerve-force, missing its proper destination, breaks out in various aberrations. These nervous aberrations commonly entail irregular deviations from the proper order of the blood-distribution, as well as alterations in the quality of the blood. That menstruation exerts a depurating action on the blood is an old idea. I believe it is a correct one. At any rate, when there is no longer a normal attraction or afflux of blood to the pelvic organs, the subject becomes liable to irregular determinations of blood to the head.

"About the climacteric the aberrant nervous distribution is attended by disorder of digestion, by disordered or obstructed secretion and excretion. The unsteady brain favours the general disposition to physical inertia. Want of exercise increases the sluggishness of the great depurating organs. The liver, the kidneys, the intestinal canal, the lungs, the skin acting imperfectly, allow the products of tissue-waste and of the mal-assimilated excess of food to accumulate in the circulation. This is marked by the urine becoming loaded with phosphates, and sometimes with uric acid." In some cases which Dr. Barnes has had special opportunities of watching closely, the outbreak of a fit of convulsions had been preceded by more than usual accumulation of phosphatic matter and of uric acid. It is interesting to remember that uric-acid crystals are not seldom found in the urine and in the blood in the albuminuria of pregnancy. Dr. Barnes is not aware of any distinct evidence in support of the conjecture that uric acid, as such, is the exciting cause of convulsion, and he is not prepared to accept the doctrine of Frerichs that the cause is ammonia resulting from the decomposition of urea. He thinks it wiser to be content with the general conclusion that the poisonous convulsion-provoking element cannot be specified; but that it is to be found amongst the products that ought to be excreted through the agency of the lungs and glandular system.

"In rather a large proportion of cases, including not a few in which the climacteric has not been reached, this loading of the urine with phosphates and uric acid is greatly occasioned, or increased, by the habit of resorting to stimulants. In these cases, vomiting is a frequent complication; and in subjects not specially prone to epilepsy, constituting the chief nervous disorder. Occasionally albuminuria even is caused by the combination of alcoholism and phosphatic accumulation; it may persist so long as to give ground for concluding that it depends upon permanent Bright's disease. But it may vanish rapidly when alcohol is cut off, and the glandular system set to work, the nervous symptoms subsiding simultaneously."

The principles of the treatment flow logically from the view taken of the etiology and nature of the disease we have to deal with. Four cardinal principles were laid down by Dr. Barnes:—

"1. To moderate central nervous irritability.
"2. To cut off emotional irritants or excitants.
"3. To cut off peripheral irritants or excitants.
"4. To eliminate all complicating morbid conditions.

"The simplest measure which involves the least possible irritation is the best. That is, to puncture the membranes and leave the rest to nature, at least, until we see she fails to carry on the process. And since even the gentlest examination is often enough to provoke a fit, I would advise the previous induction of anæsthesia by chloroform. Under the cover of this state, the catheter should first be passed to secure an empty bladder, and to procure a good specimen of urine for testing. Then at the same sitting, the membranes should be punctured by a quill, stilet, or other suitable instrument. The diminution of the volume of the uterus by the draining off of the liquor amnii, lessening the pressure upon the vessels and the vascular tension, gives sensible relief. But another good effect generally follows; one it is true not without occasional drawbacks, but still a risk which must be encountered. The good effect is this; the moment labour is started a call is made upon the nervous centres for nerve-force to be expended upon the uterus. This is its physiological destination; and if it can be kept steadily directed to this its proper work, we may hope to obviate its diversion to convulsion or other morbid action. It is, indeed, a matter of observation that uterine action will often excite a convulsion. But, upon the whole, I am disposed to think that it acts beneficially; and we shall be the less afraid of calling it into operation if we reflect—first that labour must take place, and that it cannot be effected without this uterine action; and, secondly, that we can greatly diminish the excess of irritability by the use of chloroform.

"The expediency of inducing labour when there is albuminuria without convulsion is more doubtful. As we have seen, it is not certain that convulsions will break out.

"The induction of labour is the means of carrying off, or of discharging, the excess of nervous tension. But something more is commonly required. We cannot complete labour all at once. Sometimes we must wait, and not seldom, when the nerve-force has once got into a wrong channel we shall fail to turn it all to the proper direction. Measures for moderating the excess of central irritability are almost always useful. The most available of these is the induction of anæsthesia by chloroform. It should be carried to the surgical degree—that is, to the extent of rendering the spinal cord irresponsive to irritation of the sphincters. The beneficial effect of this is sometimes very striking. The convulsive fit is rendered less violent; it is shortened. When anæsthesia is induced in anticipation of a fit, this may be almost entirely averted, and is sure to be moderated. The evidence in favour of chloroform has been greatly accumulating since Simpson's time. Chloroform blots out memory, one source of emotion; it cuts off perception, another source of emotion; it lessens reflex irritability. When chloroform or equivalent anæsthetics cannot be given we must act on the same indications. We must procure absolute rest; exclude noise, light; avoid all suggestion of disagreeable ideas; avoid all irritation of the skin. All this is especially necessary

at the acme of spinal and cerebral irritability when a fit is on or impending.

"The second indication, to cut off emotional excitants, is one that is generally studied. The means of accomplishing it are entirely dictated by the surroundings of the patient. The third indication, that is to cut off physical peripheral excitants, demands more attention. The first impulse of many when they see a person in a fit, no matter of what kind, is to dash cold water in the face. There may be no great objection to this in hysteria; in syncope it is undoubtedly beneficial; but in eclampsia it is decidedly injurious." Dr. Barnes added—"I have seen it provoke a fit. Another not uncommon error in eclampsia is to apply blisters to the nucha, or mustard poultices to the calves. These applications do exactly what ought not to be done. The irritation they produce when the whole surface is in a state of hyperæsthesia, is doubly prejudicial. The immediate effect is often to excite a fit; and the continuous irritation set up in the skin can only keep up irritation of the nervous centres. There is no fact in medicine of which a stronger conviction has been forced upon me by observation than this, that all peripheral irritation is injurious in eclampsia. It is a sin against physiology. Hence the rule, when the situation dictates manipulation of any kind, to lull the system in the artificial sleep of anæsthesia before passing the catheter, before making a uterine examination, or proceeding to induce labour.

"These principles of action apply with almost equal cogency to the treatment of epilepsy in the pregnant state; they apply with quite equal cogency to the treatment of obstinate vomiting in pregnancy.

"In the chronic state of the menstrual or climacteric epilepsy—that is, when the fit has passed away, and when the indication is to break the morbid chain by preventing future fits—bromide of potassium, belladonna, and various metallic preparations, and a carefully ordered hygiene, are our chief allies.

"The indication to cut off all complicating morbid conditions is one that rarely admits of being fulfilled in the urgent cases of eclampsia and of the vomiting of pregnancy.

"The elimination of all complicating morbid conditions is especially necessary in the prevention and treatment of the convulsive and other nervous diseases of non-pregnant women. In a large proportion of cases, indeed, this constitutes the greater part of the treatment. This applies particularly to neuralgia, to hysteria, and, in a lesser degree, to the epilepsy of the climacteric period.

"The particular form of dysmenorrhœa which is most commonly the attendant and forerunner of nervous disorder is that which depends upon obstruction or partial retention of the menstrual fluid. It would be too wide a digression from our theme to enter with any detail upon the pathology and treatment of dysmenorrhœa.

"1. Beginning with the menstrual function, there is the pain which is one of the features of dysmenorrhœa.

"2. There is gradual wear and tear of the nervous system, attended by degradation of the blood.

"3. Increased susceptibility to physical and mental impressions, marked

in many cases by the outbreak of hysteria, or neuralgia, and in a more limited proportion of cases by epilepsy.

"4. Where marriage ensues, it is generally unfruitful; proving again, by another test, that there exists an impediment to the due performance of the ovario-uterine functions.

"5. Where the obstruction is removed, as in most cases it can be, we find the preceding conditions gradually disappear. When menstruation is performed easily, the nervous complications, which are really epiphenomena, subside.

"If, on the other hand, the dysmenorrhœa be cured early—that is, before hysteria, neuralgia, or epilepsy have shown themselves,—these disorders will, in high probability, not appear at all. The presumption is great that they will be prevented; and that any *inherited* predisposition to them will remain dormant. The treatment then, both prophylactic and curative, must be directed against the dysmenorrhœa.

"In single women dysmenorrhœa is the most frequent attendant or exciting cause of hysteria or epilepsy. In a certain proportion of cases, however, no abnormality of structure or function of the ovaries or uterus is apparent. The exciting cause may spring up elsewhere; but in all there is a special proclivity developed by the normal ovario-uterine stimulus.

"In married women, and in those who have borne children, not only may dysmenorrhœa arise, but metritis, congestion, displacement, and other affections are more frequent. They hardly ever fail to induce that general debility and nervous prostration which predispose to nervous disorders. It is generally a hopeless task to cure these nervous disorders, unless we begin by relieving the local disorders upon which they so greatly depend."

Art. 3.—*Treatment of Diabetes with Skimmed Milk.*

By Headlam Greenhow, M.D., F.R.C.P.

(*British Medical Journal*, June 7.)

At a meeting of the Clinical Society of London, May 23rd, 1873, Dr. Greenhow read the case of a patient, successfully treated for diabetes with skimmed milk, on the plan of Dr. Donkin. W. H., coal-porter, was admitted into the Middlesex Hospital on November 9th, 1872. He had been of intemperate habits and subject to rheumatism and winter cough. On admission he was suffering from œdema of the right leg, and was passing a great deal of urine. He was kept under observation for some days, on a restricted diet, and was found to have night and morning cough, raising a good deal of sputum, which continued more or less whilst he remained in the hospital. On December 1st, he passed one hundred and two ounces of urine containing about four ounces of sugar by the fermentation test. He was then treated with opium, beginning with half a grain twice a day, and gradually increased to one grain three times a day. Beyond this it could not be carried, as the patient's bowels became obstinately confined, his tongue creamy, and his pupils contracted. The quantity of urine somewhat diminished, but not the quantity of sugar contained in it. On December 12th, he began to take

skimmed milk as exclusive diet; at first, four quarts, increased on December 20th to five quarts; and on January 4th, to six quarts daily. The brandy and opium were gradually decreased, and on December 19th were entirely discontinued. On December 12th, he passed ninety-five ounces of urine, of specific gravity 1035, reduced by fermentation to 1007, containing twenty-eight grains of sugar to the fluid ounce. From this time the average quantity of urine diminished, though less steadily than the proportion of sugar it contained, which grew less and less, until after January 18th no trace of it was ever found, either by Trommer's or the fermentation test. From January 21st, his diet was gradually changed, and he was allowed bran, gluten cakes, eggs, ham, meat and greens, with a smaller quantity of skimmed milk. On March 12th, he was sent to Eastbourne Convalescent Hospital, and was re-admitted to the Middlesex Hospital in April, for fourteen days, during which time he passed from forty to sixty ounces of urine in the twenty-four hours, perfectly free from sugar, and was otherwise in good health. He continued under observation after his discharge, and on May 23rd, remained in the same satisfactory condition. Dr. Greenhow remarked, that he did not bring the case forward in order to recommend skimmed milk as a panacea for the cure of all cases of diabetes; he did not even assert that a permanent cure had been effected in this case; but so far as it had gone, he considered the case an important and interesting one, as showing that it was possible to maintain an adult in health and strength for many weeks on a diet of skimmed milk exclusively, and also that such a diet is, sometimes at least, successful in removing the glycosuria He did not pretend to determine, from his limited experience, in what classes, or proportion of cases, of diabetes it would be found applicable, but thought no other treatment could have done more for W. H. In old-standing cases, especially if complicated with organic disease, it would undoubtedly fail, as do all other plans of treatment that have been tried.—Dr. Anstie asked what in this case would be the effect of removing the alcohol. That increased the urine and sometimes also the sugar.—Dr. Pavy said his own experience was diametrically opposed to the system of treatment by skimmed milk. He thought the author of the paper should have waited and collected other evidence. The case he considered exceptional. The patient's age was fifty-six, and with such patients one could do anything. No doubt the disease would have yielded to other measures. He did not stand up for the opium treatment in particular. He did not introduce it. After opium, the patient was put on skimmed milk. Twelve pints were given, and only sixty ounces of urine passed; he thought there must be something wrong here. He had tried skimmed milk. After it was given for a time, the patient would take other food; they wanted something solid. Sugar was not to be got out of fat; on the contrary, it was of the greatest use to diabetic patient. With skimmed milk, both thirst and sugar were increased. He tried it in a well-marked case of diabetes The patient had done exceedingly well with restricted diet, improving in every way. He put him on skimmed milk; the urine increased; the sugar returned, and went on increasing. He was again placed on solid food, but did not perfectly recover. Female patients, too, complained of it. He objected

altogether to the way in which this plan of treatment had been brought before the public. It had been brought forward as a cure for three of the most inveterate diseases known—Addison's disease, Bright's disease, and diabetes, cases of which had been said to be cured in a very short time. This he said he did not think right.—Dr. Donkin said that, as the originator of the skimmed-milk treatment of diabetes, he had listened with much interest to Dr. Greenhow's paper and the discussion on it. In a large number of diseases, and indeed, in most acute diseases especially, there was a natural tendency to recovery, either through what has been termed the *vis medicatrix naturæ*, or in consequence of a tendency on the part of the disease to run a definite course, and then subside. For this reason it was extremely difficult, if not impossible, to determine in these affections how far recovery in any given case was to be attributed to nature, and how much had been effected by remedies. But this did certainly apply to diabetes; with it there was no conservative energy of the constitution at work sufficient to subdue it, and it showed no tendency whatever to end spontaneously in recovery. On the contrary, the disease, if left to itself, proceeds from bad to worse, and at last ends fatally. Now this was a fact of great importance, because it enabled us to determine with the greatest degree of exactness the operation on it of different remedies; for whenever improvement or recovery took place, it must be attributed to the treatment or remedy employed. Dr. Anstie had put a very pertinent and proper question in asking whether, in Dr. Greenhow's case, the patient having been intemperate, the withdrawal of stimulants did not produce recovery. In reply to this, he could refer to a case of diabetes in which the patient had been a total abstainer for fourteen years. He had been placed on a restricted diet, similar to that recommended by Dr. Pavy and others, by his medical advisers, for a period of four months, at the end of which time he came to him, passing twenty-five grains of sugar to the ounce of urine, having a specific gravity of 1040. By a singular coincidence, this case was placed by him under the skimmed-milk treatment on the very day that Dr. Greenhow began it in his case, the 14th of December. The sugar was entirely removed from the urine in fourteen days. In January he began to take a more generous diet, and also to increase in weight rapidly. On the 8th of April last, he wrote to him the letter which Dr. Donkin handed to the President, in which it was stated that he had gained a stone in weight and that the specific gravity of his urine ranged from 1016 to 1020, never higher. He had since ascertained that his urine was free from sugar. He felt sorry at the manner in which Dr. Pavy had entered into the discussion. Dr. Pavy had written a book on diabetes, in which he asserted that, as milk contains from four to six per cent. of lactin, or milk-sugar, it must be injurious in the disease. But, more unfortunately still, in this book he had published a dietary table, in which he had placed milk at the head of the list of prohibited articles of liquid food, such as ordinary saccharine compounds. The fact was, that Dr. Pavy had bound himself to a dogma unsupported by a single clinical observation, and rendered untenable by his (Dr. Donkin's) own experiments. In 1847, '48, and '49 the speaker first observed the treatment of diabetes in the Edinburgh Infirmary, by Sir Robert Christison, who had always been a strenuous advocate of the dietetic method. During the

quarter of a century which had since elapsed, he could state conscientiously, that he had tried every known remedy, not only such as had been recommended by others, but several which had suggested themselves to his mind; but the result was negative. Opium he had often found to do more harm than good. Dr. Pavy had told the members of the Society that opium was first prescribed for diabetes by a Scotch physician; but, if Dr. Pavy would look into Aetius, he would find it recorded that it was used as a remedy in the disease by Archigenes, in the second century, and everybody knew that it had been a common remedy ever since. It had occurred to him, that possibly skimmed milk might prove an efficient remedy for the disease. He had a severe case of diabetes brought under his care, in the Sunderland Infirmary, but the result was partially a failure; the patient was an incorrigible, and could not be kept strictly on the diet. In the second case, however, he was successful. In the beginning of the year following, Dr. Wiltshire, who, he believed, was a member of this Society, but not present, was in Sunderland, and requested to see some of his cases. Dr. Wiltshire then examined the urine of two cases, which he visited with Dr. Donkin, for himself, and in each instance declared it to be free from sugar. In the one case the sugar had been removed only a few days, the patient having previously passed about 30 ounces daily, and from 25 to 32 pints of urine. The second case had been convalescent for three months and had gained three stones in weight. Dr. Donkin said that he had not in a single instance published his own unattended experience. All his cases published were authenticated by the names of professional gentlemen who saw them in conjunction with him, or with whom he attended them in consultation. He wished to tell Dr. Pavy that he had as scrupulous a regard for truth as he had, and an enthusiasm for his profession quite equal to his. If Dr. Pavy could not believe his statements, surely he should show some regard for the reputation of those gentlemen whose names he had used. He desired to point out in reference to the skimmed-milk treatment of diabetes, that it differed from the restricted regimen introduced by Dr. Rollo, nearly a hundred years ago, and since more fully developed by the practical sagacity of the late Dr. Prout and Sir Robert Christison, in the following respects. First of all, it contained a saccharine alimentary principle, necessary for health, which was assimilated in spite of the disease; and secondly, it excluded all fatty substances which were injurious in the disease. There was certainly *primâ facie* evidence that fat was converted into diabetic sugar, in the fact that in advanced cases patients might take such large quantities of fat, that the blood-serum might become milky, and yet, notwithstanding this, the temperature of the body remained far below the normal standard. What became of the fat? It was, he said, certainly not oxidized and converted into heat, and certainly not deposited in the tissues. It most assuredly, he considered, underwent saccharine metamorphosis, and of this he had satisfied himself by direct experiments. For this reason, cream, on account of the butter it contained, was certainly injurious in the treatment of diabetes.—Dr. Pavy explained that it was to the unwarranted use of the word cure that he objected.—Dr. Greenhow said he had brought forward the report of this case from no motive of advocacy, but in *bonâ fide*. He made no use of the word cure. Dr.

Anstie's query was most pertinent, but he did not think that the withdrawal of the alcohol had anything to do with the improvement.

Art. 4.—*Case of Abdominal Aneurism Successfully Treated by Proximal Pressure of the Aorta.**

By Edward Headlam Greenhow, M.D., F.R.S., Physician to and Lecturer on Medicine at the Middlesex Hospital.

(*The Lancet*, June 7.)

In the year 1864 Dr. William Murray, of Newcastle-on-Tyne, communicated to the Royal Medical and Chirurgical Society a "Case of Abdominal Aneurism cured by Proximal Pressure upon the Abdominal Aorta." The patient remained well for six years, and then died of a second aneurism. It was found that the remains of the original aneurism consisted merely of a fibrous mass, and that complete collateral circulation had been established by the enlargement of vessels both on the outside and inside of the abdominal cavity. Last year a similar case, cured by the same means, was communicated to the Society by Dr. Moxon and Mr. Durham, of Guy's Hospital. These are the only two such cases which have as yet been fully recorded; and the author trusted that the report of a third case would not be considered superfluous, more especially as in this latter some of the results of the compression of the aorta appeared to have an interest apart from that belonging to the cure of aneurism.

Christopher F——, aged twenty-eight, warder in the House of Correction at Kendal, was admitted into the Middlesex Hospital, under Dr. Greenhow's care, on May 20th, 1872. He was a strong-looking man, and his health had been good until December, 1868, when he was on board H.M.S. *Princess Charlotte* as an able-bodied seaman. Whilst drawing water from alongside, he suddenly felt something give way in his abdomen. Was soon after invalided, and on his return home obtained employment as warder. In December, 1871, he again began to suffer and lose strength.

On admission, he complained of pain in the abdomen and loins, shooting downwards to the groins and thighs. A somewhat globular pulsating tumour, about the size of a large orange was found in the abdomen, immediately above the umbilicus. It extended more to the right than to the left of the median line, and beat forcibly with an expanding lateral as well as with a forward impulse. Firm pressure over the aorta above the tumour, when the patient was sitting up, stopped the pulsation for the time being. The medical staff of the hospital having agreed with the author as to the nature of the tumour and the means to be attempted for its cure, Mr. Hulke undertook to apply the tourniquet.

May 25th.—Chloroform having been administered, Lister's tourniquet was screwed down between the tumour and the xiphoid cartilage, until pulsation ceased both in the tumour itself and in the femoral

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* Read at a Meeting of the Royal Medical and Chirurgical Society, May 27th.

arteries. On account of vomiting the pressure was withdrawn after three-quarters of an hour. The impulse remained as before, but the tumour felt rather more solid.

27th.—When the patient was thoroughly under the influence of chloroform Mr. Hulke applied the tourniquet with the same effect as before, and with two brief intermissions the pressure was maintained during four hours. After some time there appeared marked lividity of the lower extremities, which, as well as the lower half of the abdomen, became quite cold. Temperature taken between the toes was 90°. Sphygmographic tracings of the radial pulse showed increased arterial tension. The breathing became very shallow and gasping. Pulse from 100 to 120, respiration from 44 to 56 per minute. The removal of the pressure was immediately followed by the subsidence of all these symptoms. The pulsation in the tumour was decreased, the forward impulse being much less forcible and the lateral expansion only slight.

For several days the patient suffered much from vomiting, the vomit containing altered blood, and from pain, numbness, and coldness in the lower extremities, more particularly in the right limb, which gradually disappeared as the circulation became re-established. The impulse in the aneurism very greatly decreased, until on June 10th it could scarcely be felt, and the patient was allowed to sit up for a short time.

June 25th.—The pulsation in the tumour having decidedly increased again in force during the previous week, the tourniquet was once more applied so as thoroughly to compress the aorta, and the pressure was maintained for three hours almost continuously. The pulse and breathing showed the same characters as during the former operation, and there was the same coldness of the lower extremities, and of the right more than the left foot. When the tourniquet was removed there was forward pulsation of the tumour, but no lateral expansion, and the tumour felt firmer and more solid.

During several days the vomiting and coldness of the extremities continued as before. The urine was albuminous for two days. The impulse in the aneurism continued to diminish till July 1st, when it could not be seen and scarcely felt. On July 14th the patient was well enough to be discharged home to Kendal.

September 20th.—In accordance with Dr. Greenhow's request, he returned to show himself. No pulsation was found in the seat of the aneurism, nor was there any distinct tumour remaining; but above the umbilicus, to the right of the median line, was an undefined somewhat movable hardness. No pulsation could be detected in the aorta from an inch above the umbilicus downwards, nor in the femoral, popliteal, or anterior tibial arteries.

Mr. Noble, of Kendal, who sent the patient to the hospital, wrote to Dr. Greenhow quite recently to say that the man was in perfect health.

It would appear certain from this case, taken in conjunction with Dr. Moxon's and Mr. Durham's, that the process of cure by coagulation of blood in the sac of the aneurism is not necessarily a rapid process, as it was in Dr. Murray's case, but may last during many days, and sometimes even for weeks. The direct effects of the pressure upon the pulse and respiration were very remarkable, and not less so, the secondary effects of the disturbed circulation on the stomach and kidneys, produc-

ing the hæmatemesis and albuminuria which followed the operations. The occurrence of such symptoms would seem to suggest that the intense arterial distension caused by the treatment might be attended by serious danger to persons suffering from any kind of organic disease, especially degenerative disease of the arteries.

Dr. Murray, of Newcastle, said that the plan pursued by Dr. Greenhow and Dr. Moxon was in accordance with his views, and confirmed them. In the cases he had seen when coagulation once set in, it proceeded very rapidly, and was complete, and he referred to a case of iliac aneurism under Dr. Heath of Newcastle. The case had not yet been fully reported, but pressure was maintained for ten hours with no result; the pulsation was as free as before; the tourniquet was reapplied for twenty minutes, and at the end of the time the tumour was quite solid, and never pulsated again. In other cases, about six, the coagulation was within an hour; in his own case after three hours. He felt convinced that the coagulation occurred rapidly in those cases, and a long period, as fourteen days, was not needed to complete the operation.

The President (Dr. C. J. B. Williams) thought that the rapidity of coagulation would differ in different individuals, also that the tendency of chloroform to produce liquidity of the blood should be considered; it was probable that some other anæsthetic might be employed with greater advantage.

Mr. Holmes did not think that the operation was free from danger; in some cases it had been followed by death. Mechanical lesions of the gravest kind were often produced. He did not think the treatment should be employed in all cases. If an aneurism was rapidly enlarging it might be resorted to; but it was beyond justifiable surgery to do so if milder means would do. There was distinct evidence of injury from the violent pressure on veins. In three cases death had occurred. Then the prolonged application of chloroform was in itself a source of great danger. He thought a surgeon ought to consider if abdominal aneurism could not be cured by milder means. Low diet and rest often ameliorated. In other cases it was amenable to slow pressure, as by a pad or finger for a portion of the day, and without the danger attending more forcible pressure. The latter was more efficient as well as more dangerous. Though the three successful cases had been reported, yet there were others which had been unsuccessful. As to the coagulation of the blood, he thought there were two ways in which it might occur. First, gradually, as shown in Mr. Durham's and Dr. Moxon's case, in one month; secondly, by the impaction of a clot in the artery, as in Dr. Murray's case.

Mr. Henry Lee said that it was stated in the paper that the urine was albuminous, and it was explained as due to increased pressure on the vessels of the kidney. This he could not understand, as the pressure was not applied below the origin of the renal arteries.

Dr. Greenhow said that, with regard to Dr. Murray's remark on slow coagulation, he could not see where there had been any failure in the management of the case tending to produce this. The pulse was quite stopped in the femorals on the application of the tourniquet, and continued so, as long as the pressure was maintained. He was not aware of unsuccessful cases treated in this way; as he had stated in the paper,

he thought such treatment would be very dangerous in persons suffering from organic disease. He thought the danger in treating abdominal or aneurism below the aorta by means of Lister's tourniquet arose from shutting off the flow of blood to the lower half of the body. The tension in the arteries of the upper half of the body was extreme. He thought the hæmatemesis was due to the hyperæmia or over-tension of the arteries, not the veins, of the stomach; and that the albumen in the urine was due to the same cause. The man recovered from these in a few days.

Art. 5.—*On Syphilitic Fever.*

By M. Fournier.

(Paris Correspondent of the *British Medical Journal*, June 14th.)

M. Alfred Fournier, a sub-professor of the Faculty of Medicine, and a young distinguished syphilographer, has begun a course of lectures at the Hôpital de Lourcine (the Paris Lock Hospital) on syphilis as it occurs in women. "I need hardly say that all his lectures are very interesting, but there is one that deserves particular notice, as it treats of a subject but little known among practitioners, even among specialists, of that class who are in the habit of looking upon the affection about to be described as entirely apyretic, or merely symptomatic of some disturbance in the economy more or less connected with the perturbation caused by the affection in question, and not a sequence of this latter. I allude to what M. Fournier designates 'fièvre syphilitique,' which, he says, is a sort of essential fever of a specific character, and is intimately connected with, or the result of, the syphilitic diathesis. It presents itself in two different forms: it is sometimes purely symptomatic, and at others it assumes all the characters of an essential fever. The former is the less frequent, manifesting itself as an epiphenomenon of the syphilitic eruptions, and assuming the continued type which, however, is of short duration. The essential form principally manifests itself on the appearance of the secondary symptoms; the nervous temperament seems to act as a predisposing cause; while, among the proximate causes, may be named the expectant or want of proper treatment; and, in proof of this latter assertion, M. Fournier observed that, whenever syphilis was early and properly treated, the fever was generally *nil*. This essential fever sometimes assumes the intermittent, sometimes the continued type; it is irregular in its character, and occurs with or without paroxysms. It is, however, distinguishable from the same class of fevers of malarious origin by the following symptoms:—In syphilitic intermittent fever, which is nearly of the quotidian form; the paroxysms recur at night; and it also differs from the malarious intermittent type by the absence of the cold and sweating stages, as well as by the absence of those complications generally met with in the ordinary intermittent fever; but the most characteristic feature is that the spleen remains unaffected, whether during or in the intervals of the paroxysms. The continued type of syphilitic fever is like the common continued, either of the simple or paroxysmal

form. M. Fournier described also a third form of syphilitic fever, in which the symptoms are very irregular, and therefore cannot be classed with any of the above types. Sometimes the fever assumes an adynamic character, somewhat analogous to typhoid, to which M. Fournier has given the name of 'typhose syphilitique.' The prognosis, however, of this latter is not so unfavourable as the genuine typhoid, and the patients recover, first from the adynamic condition, then from the fever; but the syphilis runs its course as if nothing else had happened. Another distinguishing character of the syphilitic intermittent consists in its unamenability to the action of quinine, so efficacious in ordinary intermittent fever; and the only agent that seems to have some influence on the progress of the disease in question is mercury, either alone or combined with the iodide of potassium; but while its efficacy has been proved in the intermittent form of syphilitic fever, its action in the continued form is *nil*, or at least uncertain. M. Fournier administers the mercury internally, unless counterindicated by the state of the stomach or bowels, in which case he replaces it by mercurial frictions. M. Fournier offers the above, not as a theoretical speculation, but as the result of clinical observations, taken for a series of years, and with the thermometer and sphygmograph in hand."

Art. 6.—*The Croonian Lecture at the Royal Society.*

By Benjamin W. Richardson, M.D., F.R.S.

(*The Lancet*, June 7.)

On Thursday, May 29th, Dr. Richardson delivered his lecture at the Royal Society, Burlington House, Sir George Biddell Airy in the chair. The subject was "On Muscular Irritability after Systemic Death," and the experiments performed in illustration of it proved that certain fishes and other animals were only in a state of suspended functions when apparently dead. A frog, for instance, contained in a piece of ice, revived on the ice being melted in an air bath. John Hunter had shown this first by direct experiment. Was it, said the lecturer, that the cold simply prevented coagulation of the myosine, so that the muscle was held ready for action? Did it simply hold the minute vascular elements in a state of paralysis, so that influx of blood into the muscular fibre was easily permitted on restoration of warmth? Or did the cold suspend the nervous function? The answer was left for future reply. Speaking of the effects of motor forces, the lecturer dwelt parenthetically on the common practice after sudden death of endeavouring to excite the action of the enfeebled heart by passing through it an electrical current. Some practitioners, he said, had gone so far as to introduce a needle into the heart itself, and to make the needle act as one of the conductors from a battery. Such experimentalists, before they undertook this operation on the human subject, should at least observe the effect of the agency they were employing on the exposed heart of an inferior animal recently and suddenly killed by drowning or by a narcotic vapour. They would learn then with what infinite facility the muscular irritability of the heart, in all its parts, was excited for a moment only to be permanently

destroyed. They would learn that if blood be not passing through the muscular structure concurrently with their exciting current they could not more effectually arrest function than by the very method they had adopted to sustain it. On the subject of abstraction and supply of blood, it was shown that in all the cases of restored animation after apparent death, the condition of the heart was that of a muscle acting under the lower degree of tension. In this intermediate stage, between syncope and death, the most striking results were obtainable, but beyond this stage the methods so successful during it were practically useless for restoration. Among the effects of chemical agents, it was stated that the nitrate of amyl was of great service. Frogs had been kept in it for nine days, and yet their muscular irritability and life had been subsequently restored. In one instance this restoration took place after the commencement of decomposition in the web of the foot of the animal. In the whole series of his inquiries on the action of nervous matter, no fact had impressed him more forcibly than this, that the muscular irritability, in so far as it belonged to the muscle, might be sustained for hours after the nervous excitation which called it into spontaneous action had ceased.

Art. 7.—*Subperiosteal Excision of Hip-Joint.*

By John Croft, F.R.C.S., Surgeon to St. Thomas's Hospital.

(*The Lancet*, June 14.)

At a meeting of the Clinical Society of London, May 23rd, 1873, C. B——, aged seven, was brought as an out-patient to St. Thomas's Hospital, on February 6th, 1871, suffering from the first symptoms of hip disease, on the right side, the result of a fall one month previously. His mother was in good health. A maternal aunt had died of consumption. His father died of rheumatic gout. He became gradually worse, and a large abscess formed on the outer side of the thigh, below the joint. On September 11th he was admitted into the hospital, and the abscess was incised. On November 22nd, a slightly curved incision, three inches long, with its centre opposite the top of the great trochanter, was made down to the bone, dividing the periosteum. The soft parts were then turned aside, and the periosteum cut across at right angles to the first incision, just below the level of the small trochanter. With the bistoury the transverse division of the periosteum was carried round all but the inner and back part of the bone. Then with a periosteal elevator, like Dr. Sayre's, the periosteum was easily peeled back. An attempt was also made to detach the muscular insertions from the great trochanter, but this was not effected without the use of a knife. The top of the femur was sawn off with a chain saw, just below the small trochanter. This mass having been turned out by the elevator, the acetabulum was freely exposed. Five roundish sequestra, varying in size from a small to a large pea, were picked out of the floor of the space. The portion of femur removed consisted of the head, neck, and two inches of the shaft, measuring from the top to the great trochanter. The wound was partially closed by sutures. After the operation the limb was kept at rest, and extended by means of a bracketed long outside splint, or ex-

tension by weight. At the end of four weeks, passive motion was commenced. In the following July he was able to wear a boot and iron support. The last sinus finally closed at the end of the year 1872. When exhibited, eighteen months since the operation, he was in good health and spirits, and could run about. At the hip, very slight flexion and extension were allowed. The chief movement was of the pelvis on the spine. He could not rotate or abduct the limb. In this respect, therefore, Mr. Croft did not think he had been a gainer by the operation as he performed it. The limb appeared shorter than the opposite one. On measuring from the anterior superior spine of the ilium to the tip of the internal malleolus, the right leg was two inches shorter than the left; but on comparing the length of the right femur with the one not operated upon, the sound femur measured $11\frac{3}{4}$ inches, and the right bone scarcely the eighth of an inch less. From the crest of the ilium to the top of the shaft on the right side the distance was three inches, and from the crest of the ilium to the top of the trochanter on the healthy side, four inches. The anterior superior spine of the ilium, on the right side, was one inch above the level of the opposite point of bone. Mr. Croft remarked that though the case did not exhibit any superiority in the matter of range of movement, yet to the subperiosteal method of operating was due the remarkable and important fact that the diseased femur, from which two inches of shaft were sawn off in November, 1871, was now almost, if not quite as long as the healthy femur in the opposite limb.

Mr. William Adams thought the case interesting, although motion of the joint was not obtained, and really fibrous anchylosis was the result, the same sort of issue occurring as in other hip-joint operations. He believed that the operative procedure in these cases was delayed much too long, and that when an abscess existed it was better to open it, and to operate immediately afterwards.

Mr. Barwell said that according to his experience Sayre's operation was by no means universally successful; there were many varieties in the mode of procedure, and the subperiosteal was not always advantageous. He also doubted the precise accuracy of the measurement.

Mr. Adams hereupon suggested that the limb should be measured forthwith, and Mr. Croft having assented, the President requested Mr. Callender and Mr. Christopher Heath to examine the child. The report of these gentlemen, brought up some fifteen minutes later, confirmed the accuracy of Mr. Croft's measurement.

Mr. Croft, in reply, combated the opinion of Mr. Adams as to the time when the operation ought to be performed. Most of these cases have a tendency to lead to waxy degeneration of internal organs, and according to his own experience it appeared that when suppurative synovitis with subsequent caries existed, the case would prove fatal, whereas if a case of necrosis be met with, and action taken early, it would do well. Mobility was retained by preserving the muscular attachments, showing the utility of leaving the periosteum on the top of the femur. Success would not always attend a great operation. In this case two inches were removed, and one inch reproduced.

Art. 8.—*Traumatic Rupture of the Tympanic Membrane.*

By W. B. Dalby, M.B., F.R.C.S.

(*The Lancet*, June 14.)

At a meeting of the Clinical Society of London, May 3rd, 1873, Mr W. B. Dalby reported five cases of trumatic rupture of the tympanic membrane, and five others also were mentioned as having come under his notice. In three cases the injury was caused by the head of a pin being thrust through the membrane; in three others, a needle, the point of a pair of scissors, and a blade of straw were used in the same manner. In the remaining four cases the rupture was caused as follows: by a fit of vomiting, by blowing the nose vigorously, by a box on the ear, and by pressing some cotton-wool into the ear. The terminations of these cases were very various, both as regards the healing of the rupture and the extent of permanently impaired hearing. In six out of the ten cases the wound healed, and when no inflammation in the tympanic cavity followed the accident, a few days sufficed for the perforation to close. In the other four cases the perforation did not heal at all, and in two out of three improved hearing was obtained by the use of an artificial membrane, in the form of a piece of moistened cotton-wool, worn pressed up to the tympanum. When suppuration had been once established in the tympanic cavity, the treatment pursued was the same as in cases where the perforation had been the result of disease, and consisted chiefly in the use of astringents. No treatment at all was adopted when the injury was not followed by inflammation in the tympanum. Mr. Dalby pointed out that it did not follow necessarily that the hearing was regained in a greater degree if the rupture healed than when the perforation remained, and that the greatest losses of hearing followed those accidents in which the greatest force was used in producing the rupture. The conclusion arrived at was, that the injury to the nervous structure of the ear behind the tympanum caused the loss of hearing rather than the injury to the membrane itself. Where the shock was very slight, as in the instance of injury from a needle or any sharp instrument, the hearing was regained completely, or nearly so; but if the instrument used were blunt-pointed and considerable force was employed, the resulting deafness was proportionately greater. The same held true when rupture took place from sudden condensation of air in the tympanum (as in blowing the nose), or in the meatus (as in a box on the ear). It was quite impossible, Mr. Dalby said, to recognise a cicatrix in the tympanic membrane if the patient had not been under observation during the process of healing, as thinning of the membrane and other changes occurring during catarrh of the middle ear were sometimes so like cicatrices as not to be distinguishable from them.

Mr. Hinton confirmed the author's opinion as to the hearing powers, doubted whether a box on the ear would produce rupture, and said that all cases of this kind required most careful and accurate diagnosis.

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